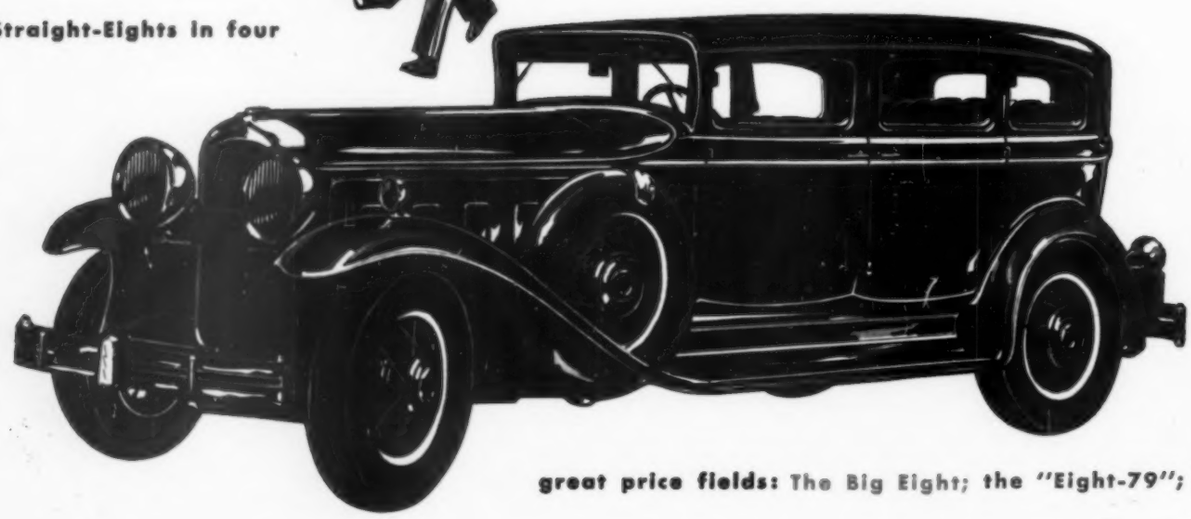
Fortune

One Dollar a Copy MARCH 1930 Ten Dollars a Year

MARMON

Always one of the great creators of motor car fashions and engineering advances, Marmon for 1930 cites these great factors as its most important contributions: All Marmons are Straight-Eights, each with an even greater abundance of power + + + **All Marmons are extra spacious and luxur**

ious inside + + + All Marmons reflect fully the Marmon tradition of smart ness and good taste + + + **This time-honored motor car is now avail able to practically all families + + + Four great Straight-Eights in four great price fields:** The Big Eight; the "Eight-79"; the "Eight-69"; and the Marmon-Roosevelt. (illustrated—the Marmon Big Eight.)



Marmon Motor Car Company, Indianapolis

They *flew*—
they *saw*—
they *concurred*

A DECISION was needed—urgently. The successful completion of a huge project was at stake. The directors, hurriedly summoned, decided to see conditions for themselves. Boarding their private Travel Air they flew—they saw, they concurred.

Modern Caesars of industry, responsible for the direction of vast and far-flung properties, are turning more and more to the airplane as a means of quick, personal contact with their forces in the field. At short notice and in a few hours of flying time, they can make tours of inspection which otherwise might take weeks—or even not be made at all.

The six passenger Travel Air cabin monoplane is particularly well suited for the modern flying directorate or executive committee. Powered with the 300 Horse Power Wright Whirlwind engine, it has a cruising speed of 115 m.p.h., a high speed of 135. A more luxurious model, equipped with a 420 h.p. engine is available. Either can be equipped with office furnishings to suit the purchaser.

A nationwide organization of Curtiss-Wright distributors and a network of more than forty Curtiss-Wright bases strategically located, assure prompt service to the users of Travel Air planes wherever they may fly.

Low Operating Cost. Full particulars of the actual use of Travel Air planes in business, with rather surprising figures as to low operating cost, will be gladly supplied. Executives can receive this information by writing department T-1.

TRAVEL AIR COMPANY
Division of CURTISS-WRIGHT
Sales Offices: 27 West 57th Street, New York

A PLANE FOR EVERY PURPOSE — TRAVEL AIR

DOES YOUR PRODUCT LOOK ITS BEST?

IT is no longer enough to produce merchandise that is well made, wears well, is useful. Purchasers are considering the looks of every article submitted to their choice.

Color adds to the attractiveness of most goods displayed in stores and show rooms. Even typewriters and telephone instruments are putting aside the conventional black for brighter, gayer hues.

Nitrocellulose lacquers have opened new possibilities for applying color to wood, metal, fabrics, and other materials. They offer more advantages than the obvious ones of beauty, quick drying, and ease of application. They form a tough, durable, protective film that is waterproof and is easy to clean with soap and water. They may be transparent and invisible, or, when pigments are added, completely opaque.

The nitrocellulose film is adhesive as well as protective. Solutions of nitrocellulose form light adhesives between articles that must be easily detachable, or a cement as strong as the materials it binds. Solutions of this versatile product are used both as a stiffener for fabrics, and as a waterproofing that leaves the fabric soft and pliable.

New uses for nitrocellulose lacquers and special solutions are discovered almost every day. There are few industries in which they cannot be profitably employed. Perhaps this suggests a new use to you. Lacquers are sold by the paint, varnish, and lacquer trades.

We have prepared a booklet called, "The Story of Modern Lacquers," which will tell you many interesting things about lacquers that it may be profitable for you to know. A request for the booklet on your business stationery will bring it to you promptly.

HERCULES POWDER COMPANY

(INCORPORATED)

Room 19 Cellulose Products Department
WILMINGTON, DELAWARE

FORTUNE is published monthly by TIME, INC., at 205 E. 42nd St., New York, N. Y. Application for entry as second-class matter is pending. Subscription rates: One year in the U. S. and possessions, $10; Canada, $10.50; elsewhere, $11.

FACING THE WINDS FROM A MIGHTY SEA

SAN FRANCISCO LOOKS WEST . . . INTO THE FUTURE

Out of the bay Portola found, across the path of Drake's *Golden Hind* a giant commerce is plotting its way. On the farthest shores of the long Pacific tomorrow is beginning to dawn . . .

900,000,000 people in the lands that it borders are waking to wonder what's new in the world and whence their share of the world's production.

Alert, modern-minded, San Francisco is preparing an answer.

San Francisco Bay is the natural gateway to these people in the lands bordering the Pacific; and the ground-work for this great Pacific commerce is already laid. Here the rails of three great transcontinental roads meet water at the edge of a bay where every ship in the world could find shelter at one time, and the value of whose water-borne tonnage is even now second in the United States. Here is the headquarters city for the leading financial, manufacturing, railroad, shipping and distributing interests of the West. San Francisco is center of a region enormously rich in natural resources (*economical natural gas is one*). A mild, sunny climate the year 'round and ideal living conditions raise labor to its highest productivity.

Today San Francisco serves the most concentrated population in the West. Within a radius of one hundred and fifty miles live half the people of California, while 1,600,000 people of more than average per capita wealth live within a radius of an hour's ride.

11,000,000 people who live west of the Rocky Mountains are served more quickly and cheaply from San Francisco than from any other city, and the advantages that make this so have a direct bearing on the problem of serving the near-billion along the Pacific.

The known tremendous advantage this city owns—and a pioneer sense that was born when the West was young—promise a future that none can deny.

Write Californians Inc., Dept. 2203, 703 Market St., San Francisco, whether or not you've a visit planned for this year. They are anxious to tell you more about San Francisco—to send you facts and photographs.

SAN FRANCISCO

IN CALIFORNIA—"WHERE LIFE IS BETTER"

MARSHALL FIELD and Company

RETAIL · CHICAGO

Vivid young moderns whirling through recess from school . . . refreshed travelers home from Cuba, California, Italy . . . fashionably gowned women from a dozen states, in town for a wardrobe or new point of view . . . they are choosing spring shoes now, at Marshall Field's. Cool little linen things, tinted any shade; perforated kidskins in romantic spring hues; soft buckskins, white with a dark accent; indispensable lizards and watersnakes. Shoes to play, dance, walk, and be charming in; shoes to show at smart places; shoes size 3½A, that look it, and size 7, that don't.

To serve all the women of taste who come here, Field's offers a completeness of shoe fashions and sizes not elsewhere equaled. To one who likes to choose for herself this variety is irresistible. You are invited to visit the Shoe Salons.

Some other notable users of Carrier Systems

Whitman's Chocolates
Gillette Razor
Roxy Theatre, N. Y.
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Cheney Silks
Crown Rayon
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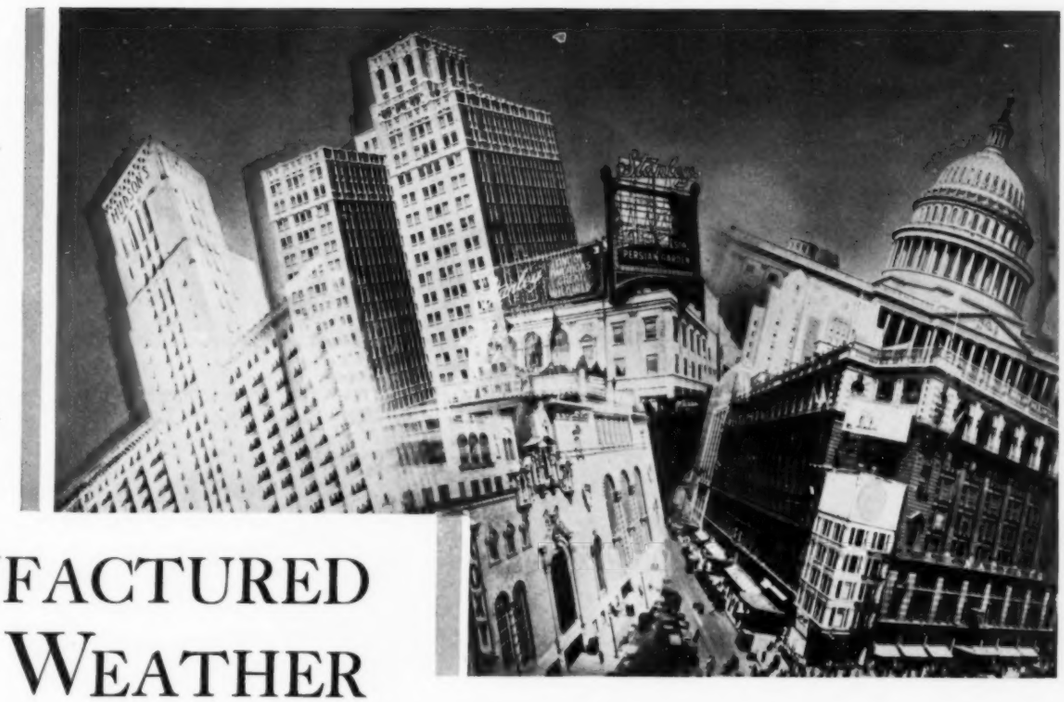


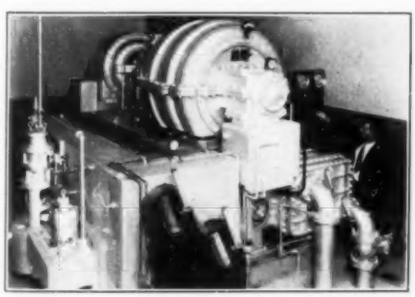
MANUFACTURED WEATHER

always pays its way

AN ARCHITECT designs an office building or a hotel which will be conspicuously modern—even to the kind of air to be breathed by stenographer or guest. His plans call for manufactured weather.

A department store, like Macy's or Hudson's, installs a million-dollar plant for making weather . . . and the casual buyer of a paper of pins shops with greater comfort than ever before. A manager of a $100,000,000 enterprise, like the Postum Company, accurately controls temperature and humidity in his huge plants with a weathermaking system as successfully as some one else does in a little workshop or laboratory.

For twenty-five years Manufactured Weather has been winning its way all over the world under the guidance of Willis H. Carrier. There is scarcely a person anywhere who in recent years has not come in contact with it. In a hundred famous theatres; in a dozen great department stores; in hundreds of factories; and in a few of the most modern offices, banks, and hotels, Manufactured Weather pays its way.

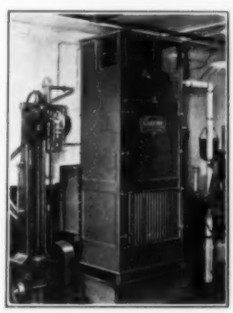


This compact Carrier Centrifugal Refrigeration plant is part of the system which supplies Manufactured Weather to the Halls of Congress in the Capitol at Washington. During one hot, humid day this system often extracts 4000 gallons of water from the air. On the hottest day these rooms are as comfortable as the most delightful mountain resort.

So rapidly has the industry grown that responsible people are now convinced that the general use of Manufactured Weather in office buildings, hotels, apartments, homes, is as inevitable as the use of elevators, automobiles and electric lights.

With Manufactured Weather indoors, you always breathe *cooled, cleaned* air, free of excess humidity in summer, while in winter you enjoy *cleaned, warmed* air at the proper humidity. The system is automatic. Once it is installed, you may depend upon ideal indoor weather the year round.

More and more it is being recognized that buildings with window-poles in corners, dust-cloths in desk drawers, nerve-racking noises in the ears of workers, drafty spots near windows for executives, and stuffy inner spaces for clerks are out of date. Those buildings which do not use Manufactured Weather—which are not cooled in summer and heated in winter with properly conditioned air—are rapidly becoming obsolete.



Carrier Unit Air Conditioners such as this one in a laboratory of the Fisk Rubber Co. cost only a few hundred dollars, and in small rooms or factories provide the same automatically controlled Manufactured Weather that in larger places is provided by the Carrier Central System of Air Conditioning.

Carrier Engineers are at your service whether you are interested in conditioning a small room or need a plant for a 90-story building.

But whether your investment is one thousand dollars or one million dollars, you can depend upon Manufactured Weather paying you constant and generous dividends. It is not unusual for the entire cost of a factory installation to be saved in one year. In office buildings, hotels, and stores it is a highly profitable investment. Ask us to prove it.

Carrier Engineering Corporation

NEWARK, NEW JERSEY

OFFICES: NEW YORK · PHILADELPHIA · BOSTON · CHICAGO · CLEVELAND
WASHINGTON · DETROIT · KANSAS CITY · DALLAS · LOS ANGELES

CARRIER ENGINEERING COMPANY, LTD.
LONDON, PARIS, BOMBAY, CALCUTTA
JOHANNESBURG

CARRIER LUFTTECHNISCHE GESELLSCHAFT
STUTTGART, BERLIN

Manufactured Weather *makes* "Every day a *good* day"

Our Congratulations
to
Fortune

And, in connection with your epochal first issue, our thanks for the privilege of presenting our message, in such distinguished company, to the largest possible assemblage of the most responsible class of readers in America—a class which naturally would be attracted likewise to

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The GLEN SPRINGS

the only resort in America where the famous Nauheim treatments for the heart are given with a natural calcium chloride brine—as at Bad Nauheim itself. *Address* MR. WM. M. LEFFINGWELL, President, The Glen Springs, Watkins Glen, N.Y.

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The
BLACKSTONE
SOUTH MICHIGAN AVENUE AND THE LAKE FRONT
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HOTELS *of* Distinction

THESE world-famous hotels have been individualized by impressive ideals of service, quiet dignity and a lasting congenial atmosphere.

Residential suites for long term leases available at special discounts.

Particular attention given to Banquets, Balls, and other Social Functions. Unusual facilities for Conventions at The Drake.

Write or consult C. C. Drake Company for steamship tickets, tours. Every facility for travelers. Offices in above hotels, and in The Roosevelt, New York, The Benjamin Franklin, Philadelphia, The Willard, Washington, The St. Francis, San Francisco.

The DRAKE
HOTEL *Chicago*
LAKE SHORE DRIVE AT MICHIGAN AVENUE

Photo by Anonya

THE SAVOY-PLAZA

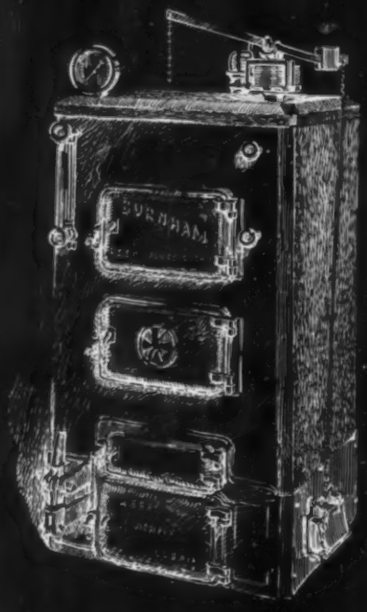
Majestic and Impressive with the 840 acres of Central Park at its doors . . . One of the world's distinguished Hotels with the Most Beautiful Outlook in New York.

Illustrated Brochure on Request

Fifth Avenue, New York, 58th to 59th Sts.

Henry A. Rost, *President*

Same Management as The Plaza



Now That Economy Counts For So Much

Burnham Boiler's long fire travel counts more than ever. Its long fire travel makes its short coal bill.

P.S.—

This same long fire travel is an additional insurance of economy, when oil is the fuel. It also has a way of muffling down combustion noises.

P.S.—P.S.—

There's a booklet called Letters To and Fro that tells of eight people's successful solution of eight separate home heating problems. Send for it.

Burnham Boiler Corporation

IRVINGTON, NEW YORK

Representatives in all principal cities of the United States and Canada

STRENGTH

The strongest tire is the safest tire. The new Firestone Supreme Balloon holds all records for safety, endurance and mileage—a tire of character and personality in harmony with the finest, fastest cars—for safety and dependability at high speed—for quick starts and sudden stops.

The Gum-Dipped cord construction—exclusive with Firestone—is the strongest known to tire building. Added layers of rubber, deeper tread and the most skilled workmanship ever put in a tire make it the choice of the world's most discriminating motorists. The Firestone Dealer can equip your car now.

Firestone
Supreme Balloon

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XUM

The Airport • •

Key that opens the sky lanes to Commerce

THE pioneering has been done. Oceans have been crossed . . . continents spanned. The air mail is an accepted fact . . . transcontinental air-rail lines run on regular schedule.

Air transportation has proved itself. All that remains is to amplify, to extend, to make readily available.

But the ship that takes the sky must always be able to come down . . . in safety. Aviation can grow no faster than the airports the country provides.

It is the purpose of the Curtiss-Wright Airports Corporation to see that this country does not lack for opportunity to put the air to good use.

So there are in actual operation today 12 Curtiss-Wright ports that stand as patterns for the whole world. More are in prospect. Millions of dollars in capital have been pledged exclusively to the planning, development and management of these ports so that this country may have as fine a system of transportation by air as the whole world knows.

Each Curtiss-Wright port is located with an eye to the future as well as to the present. They are close to industrial and population centers . . . far closer than expanding city lines will make possible in another decade.

They are large enough to handle all the traffic that the air will bear for years to come. They are so planned that they readily may be expanded . . . and they are financed and directed by one central, unified management so that each may have the advantage of specialized skill and experience.

In all of them, the entire industry is welcome. Space is for lease to transport companies, aerial photographers, railroads who will engage in air transportation, manufacturers of planes, of engines, supplies, and accessories, and fuel—all commercial operators and private owners.

Student instruction and local passenger carrying, however, are reserved exclusively for Curtiss-Wright Flying Service.

• • •

Curtiss-Wright will be glad to send descriptive literature on any or all of its ports to any executive interested. A representative will be found at each port. You may call on him there . . . or write either to him or the central offices of the Curtiss-Wright Airports Corp., at 27 W. 57th St., New York City.

An air liner taking on passengers at a Curtiss-Wright port

Every facility for handling spectators as well as passengers and planes is provided at the Curtiss-Wright ports

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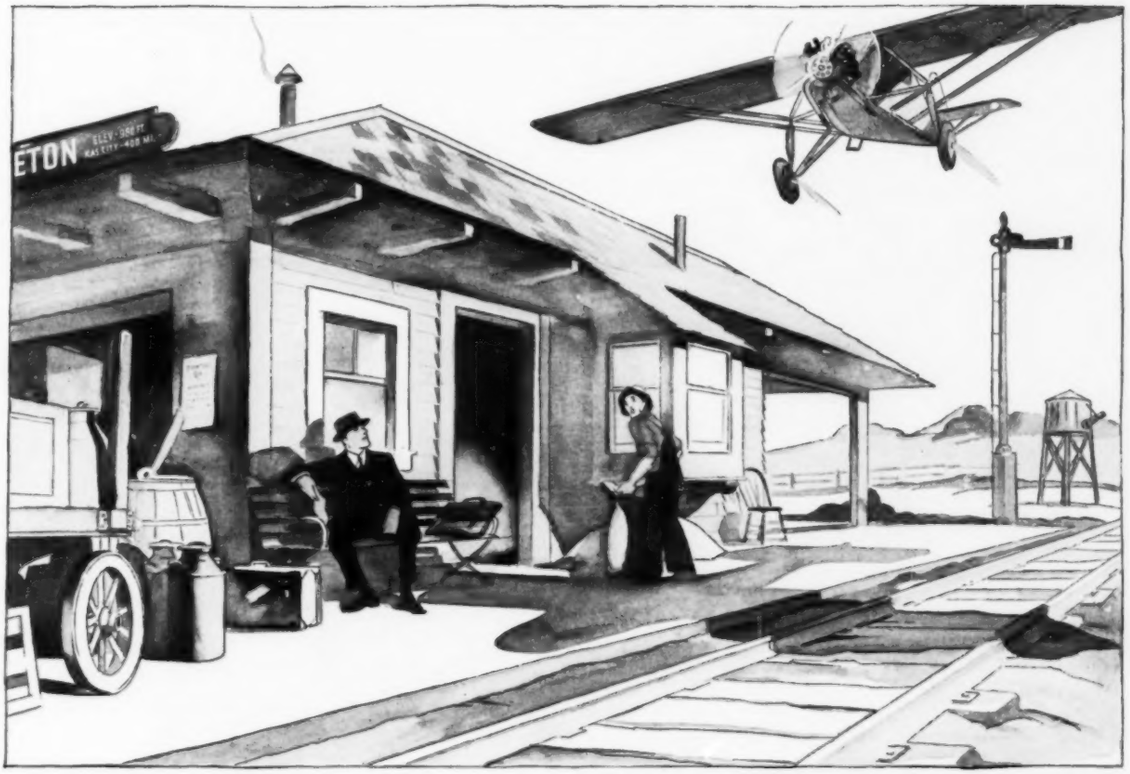

Your star salesman—

is he warming a seat on a railroad platform?

THE railroad junction may mean only a long, dreary wait to your star salesman—but it means a dollars and cents loss to your company. When he spends hours waiting for a train your firm loses not only his salaried time, but also the orders which he might have secured.

That fast air transportation minimizes such losses is one of the reasons why big business has enthusiastically turned to private planes.

The experience of one large Eastern manufacturing company is typical. An efficiency expert who was called in found that sales costs were too high. Investigation disclosed that two salesmen brought in 78 per cent of the total business each year. And it cost no more to travel each of these men than any of the other six members of the sales force.

To reduce sales costs the expert recommended that the star salesmen also take over some of the territories which were not yielding full sales quotas. To enable them to make the increased number of calls he advised the purchase of an airplane. His recommendation was adopted and, because a proved business plane was needed, a six-place Ryan was bought shortly afterward. Today, it has seen over 200 hours of service and has been a dividend-paying investment.

Executives who travel in Ryans are independent of railroad time-tables. With a speed of 150 miles per hour and a cruising range of 700 miles, Ryan planes make possible fast, conveniently arranged flying schedules. Let us tell you more about Ryan transportation. Write today for our illustrated catalog and complete information.

BUILDERS OF LINDBERGH'S RYAN "SPIRIT OF ST. LOUIS"

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Why not enjoy the great difference

–GOES A LONG WAY TO MAKE FRIENDS

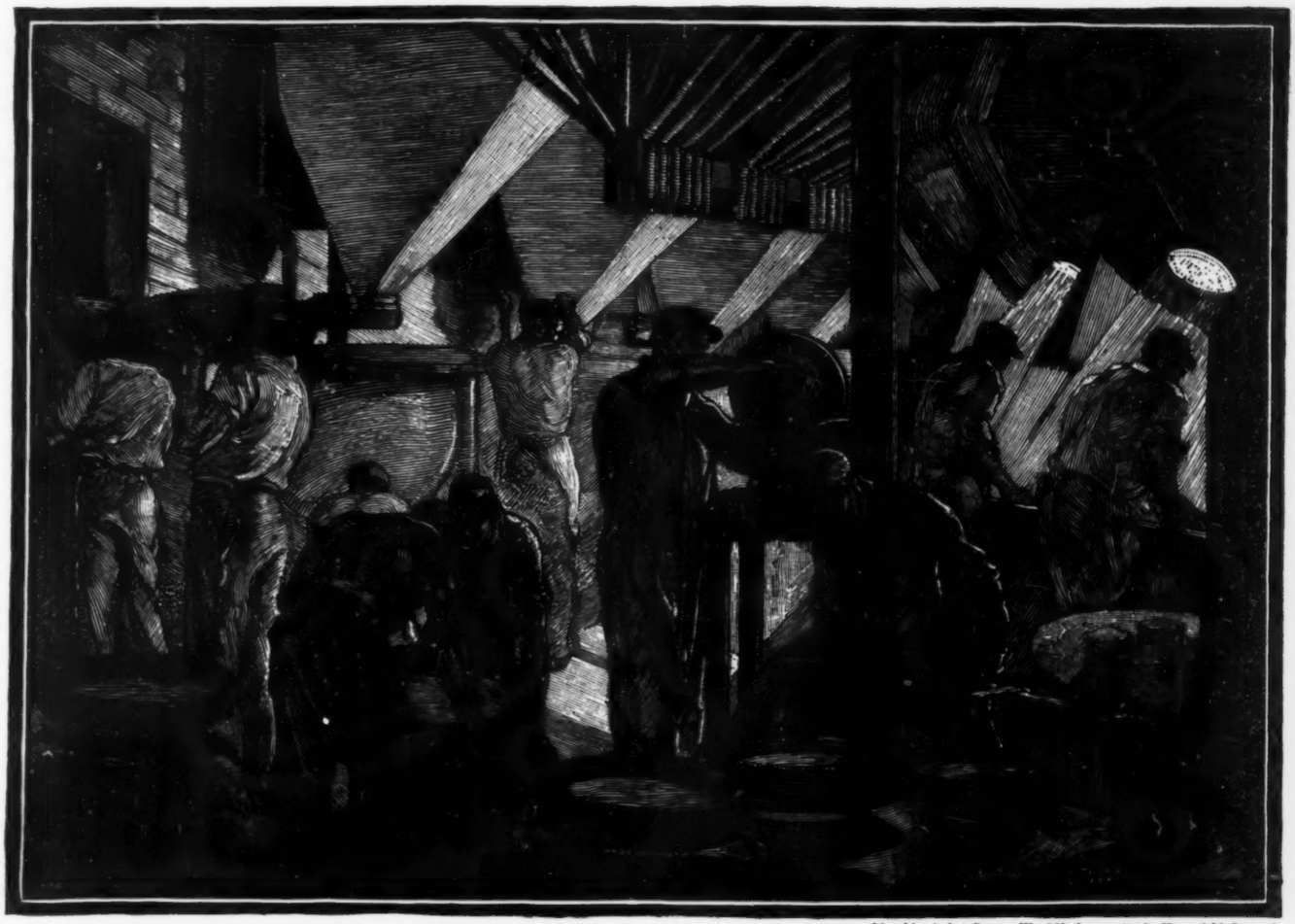
Cross-sections, diagrams and laboratory phraseology hold very little interest for most of us. But we are notably quick in attaching the proper significance to a good reputation . . . When people concede the superiority of a product they are willing to waive the reasons and accept the results. Personal experience is the surest means of bringing out the tangible results of extra value.

The *Dual*-Balloon has literally blazed a new trail for General's long-held leadership. It is extravagantly generous in the qualities that make up complete satisfaction.

Structurally, the *Dual*-Balloon is designed to double the advantages of single balloons. It exceeds every demand for luxurious comfort, controlled safety and big mileage. A set of *Dual*-Balloons on your car will prove the great difference you hear so much about.

The General Tire and Rubber Company, Akron, Ohio.

The **GENERAL**
Dual-Balloon 8



Mural by Arthur Covey. Wood block engraving by Howard McCormack.

Producers of grinding wheels are facing most exacting demands
—thousands of specifications in the interest of rapid production with precision.

A situation that calls for schooled men in laboratories
—engineers who investigate the work these grinding wheels are expected to do
—skill and exacting methods in the grinding wheel plant
—Norton Company, Worcester, Massachusetts.

NORTON

Grinding Wheels

Grinding and Lapping Machines

Refractories

Porous Plates

Floor and Stair Tile

Pulpstones

The New York Trust Company

Capital, Surplus and Undivided Profits $45,000,000

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100 BROADWAY

40TH STREET AND MADISON AVENUE **57TH STREET AND FIFTH AVENUE**

GLOBE Multi-PLY FORMS

"non-stop" records

business, too, has its non-stop records

The wasteful *stops* in record-writing have been eliminated by Globe Multi-PLY forms. This "non-stop" method does away with the *getting ready* and *finishing up* operations which are always present when cut forms and carbons are used. No wasteful stops to stuff carbon paper, to jog sheets, align forms, insert in machine and remove carbon paper. With Multi-PLY these operations are done automatically and mechanically, saving 50% to 75% of the billing operator's time. 500 to 1000 sets of forms in one loading — truly a "non-stop" record.

save time and money

Time is further saved by combining forms. With Multi-PLY, invoices can be combined with order forms, department instructions, bills of lading and the like. Time spent in re-copying is saved — and since time is money — money is saved.

speed-up plant and office operations

Delays are costly. They not only waste time but they upset schedules and hamper production. Delays which occur when original data is passing from department to department for re-copying, are eliminated by combining forms and writing them the "non-stop" way — *in one operation — at one time — in one place.*

simplify record-writing

Simplify with Multi-PLY. Reduce red-tape — eliminate useless forms — cut down on clerical labor — speed up billing methods — make accounting easier. All these advantages come with the use of Multi-PLY Forms.

insure greater accuracy

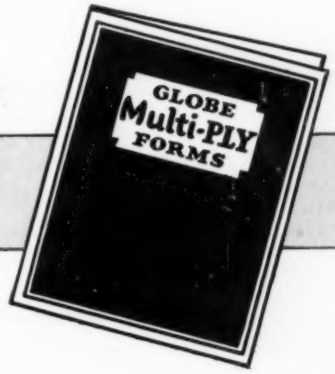
Errors are costly — in time, temper and money. You run the risk of such errors every time records and forms are copied and re-copied. Multi-PLY Forms stop errors due to re-copying. Clear legible copies prevent mis-reading of items, figures and amounts. Disputes are reduced. When you stop errors you save time and money, and speed up operations.

The Globe Register Company

DIVISION OF UNITED AUTOGRAPHIC REGISTER CO.

2414 Reading Road, Cincinnati, Ohio — 19th & Union Streets, Oakland, Calif.

Branches: all principal cities. — *Factories: Chicago, Cleveland, Oakland, and Cincinnati*



this portfolio of Multi-PLY *forms free to business executives*

Here is a DeLuxe portfolio that you'll be glad to have in your library — at the office or at home. It is full of information concerning Multi-PLY Forms — and contains an assortment of actual samples.

The portfolio is free — and carries no obligation, whatever. Just ask for Portfolio "F."

Off the Record

Day's work

UNLIKE most New Yorkers, Mr. Joseph P. Day, realtor and auctioneer, does not like to take ocean trips. Unlike most millionaires, he never wears an overcoat and usually wears a necktie like Abraham Lincoln's. And unlike most auctioneers, Mr. Day has a habit of halting the bidding in the midst of an auction, stepping down from the platform and disappearing. When he returns, after a few moments, the bidding proceeds with renewed vigor.

It is a rather curious performance which occurs during this interlude. Behind the platform two assistants are waiting for Mr. Day with a large glass of fresh pineapple juice. This he quickly consumes. He is then stretched at full length on the floor with one assistant at his head and the other at his feet. The one grasps his wrists, the other his ankles, and each pulls with all his might in opposite directions. Finally Mr. Day asks them to stop, adjusts his clothes and returns, entirely refreshed, to his auction.

Another whim which Mr. Day indulges is to have all suitable articles of his attire monogrammed in red and gold, the device being a representation of the rising sun. He explains this, genially if somewhat obscurely, by the phrase: "I am the second Day."

Mitchell merger

The first merger ever put through by Charles Edwin Mitchell, of the National City Bank, centered around a mince pie. The merged interests were three: himself, a college chum, and a landlady. As an undergraduate at Amherst, young Mitchell had a good friend whose father made a particularly luscious brand of mincemeat. Young Mitchell was extremely fond of mince pie. He persuaded his friend to have a regular supply of mincemeat sent from his father's factory. He then arranged with his landlady to have this raw material manufactured into mince pie. Of every two pies she made, she kept one, while the other was divided equally between Mitchell and his friend. Thus all three of the merged interests profited by young Mitchell's talent as a promoter.

Mule Trader Harrington

There are times in the existence of every government when it needs mules. When the British Government needed mules during the Boer War it sent to Lathrop, Mo., for them, and a then comparatively young man called "Mule Trader" Harrington supplied them. During the World War the British Government again needed mules and "Mule Trader" Harrington and his partner supplied them again—for approximately $85,000,000. Other Allies also needed the animals and when the war was over Harrington and his partner, J. D. Guyton, were made co-defendants in an income tax suit in which the U. S. Government charged that Harrington's mules had netted more than $10,000,000 in profit. Shortly after the suit Mr. Guyton retired from the mule business and went into banking. He is now a considerable figure in his particular financial world.

"Mule Trader" Harrington did not follow Guyton's lead. He continues to sell mules at the rate of 1,500 to 2,500 yearly to cotton planters, cane growers, and lumbermen in the South. Instead of 50,000 (as was common during the War) now only 450 mules at a time range the 10,000 acres, raise the echo in $50,000 barns, drink from the $100,000 artificial lake. No longer does he keep 100 teams on incessant "K.P." duty, hauling food for the luckier stay-at-homes. But he is nevertheless a highly successful business man. The demand for mules, like the demand for mousetraps, varies from season to season; the important thing is to be ready with the supply.

W. R. Harrington is no sybarite. He loves his mules, says that the instinct which makes it possible for a trader to "spot" a good quadruped is born in a man, cannot be acquired. He works in a little box-like frame office that has a porch across the front, and a pot-bellied wood stove indoors, and for guardian a foxhound "too old to bite." Harrington wears a mud-splattered overcoat as he leads visitors about the place, pointing out to them his costly barns, his lake, his packs of hounds. He rarely travels from Lathrop except to ride on the freight trains with the mules which he delivers.

Brooder

In a huge drawing room near Beverley, Mass., right in the heart of the Antique Belt, stands a cabinet, electrically operated, sound producing, symmetrical, severe. About this device, which might be a radio but is not, are paintings hundreds of years old, tomahawks, arrowheads, peacepipes, other valuable bric-a-brac. At proper intervals, the Thing is opened and from it are removed cheeping baby chicks, dozens of them, eugenically born in surroundings of the most distinguished culture and inspiration.

Guarding them affectionately from the brutalities and disillusionments of the world, hardening them against the days when they must get out and scratch for their living, is Otis Emerson Dunham, president (and owner of all the common stock) of Page & Shaw, Inc. ($6,000,000 of sweets yearly). Mr. Dunham's interest in animal life is not confined to chickens; he also watches over his private herd of reindeer and elk and, it is said, two bison. These he does not shelter in his drawing room, however, but permits to roam about his 110-acre estate.

Goatherd

Book publishers await somewhat breathlessly the development of a scientific brooder for books. They, more than other business men, have to count their chickens before they are hatched, and books are notoriously poor layers. Publishers toss in their sleep waiting for a best-seller to hatch. Many wait year in year out in vain.

Such was the fate of the many-times bankrupt firm of Small, Maynard & Co., in Boston, which lost the fortunes of several successive men.

The last of these was Norman H. White Sr., of Brookline, who as president of Small, Maynard was unable to pay himself as treasurer of the Boston Bookbinding Company for the books he was binding for himself. Aided by his son, Norman Jr., an able editor, he sought a best-seller which would balance his books, found none, voluntarily petitioned in bankruptcy, was convicted on one count on one of eight indictments for theft of $469,000 from Boston banks, was sentenced to three to five years in the State Prison.

Now at the Prison Camp in Rutland, he has found a welcome substitute for the sterile chicks of the publishing house. He has been given charge of the camp goats, at his own request, and has built up from small beginnings a herd of more than a hundred. He has built for them a pen, taught them to recognize his voice, to stand while he milks them. Nightly they fall in line, file past him, give down ungrudgingly their 200 daily quarts of milk.

Gold, paper

After the epic of Coolidge economy, we must expect epics of other lesser economists. Recently a party of guests was invited to William Randolph Hearst's great California ranch. The party was carried from San Francisco to San Luis Obispo in Mr. Hearst's private car. There they were met by a fleet of open and closed Rolls-Royces which conveyed them to the ranch mansion. Ladies' maids and valets, assigned to the guests for the duration of their stay, led the arriving guests through magnificent corridors to their rooms. When the party assembled for dinner they sat down before gold plates, and next to each plate was a paper napkin.

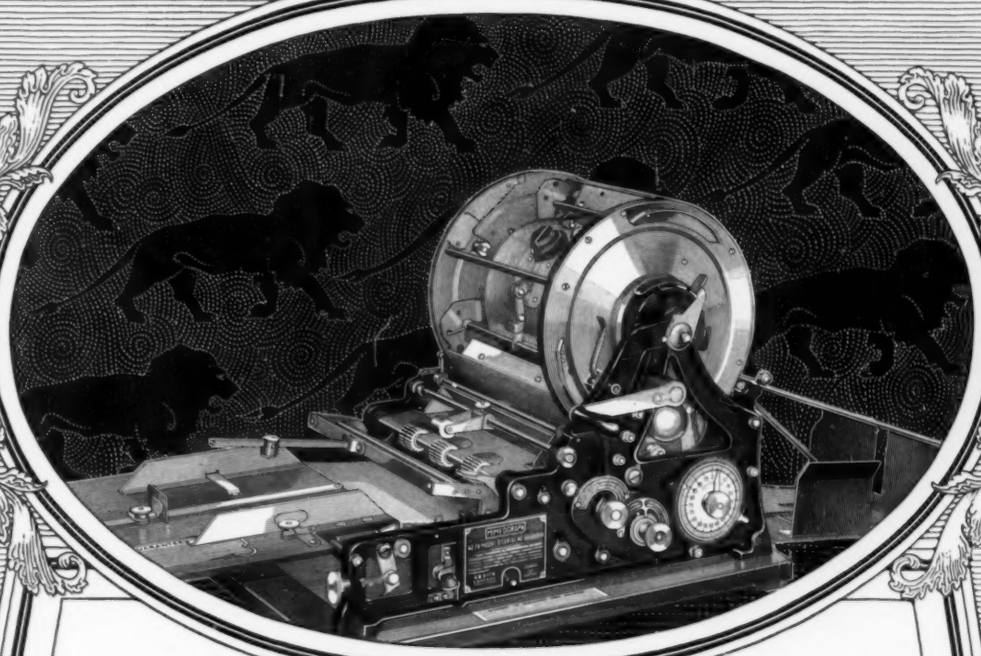
Outright

One man who transacts his business on the floor of the New York Stock Exchange was completely unaffected by the market tail spin of last autumn. He was in the enviable position of holding a corner, being able to sell continuously at undeflated prices, and never on margin.

He is certainly one of the best known men on the floor, although he owns no seat. He has grey hair which is never tousled, wears dark, neat, well-fitting clothes, and habitually carries a handful of quarters which he juggles cleverly, absently, in his left hand.

No one—not even Jake Scherrick himself—

[*Continued on page 26*]



THE MONARCH OF SPEED

It does a lion's share of the world's duplication—is king of the realm where speed, accuracy and economy count supremely—this money-saving Mimeograph of far-flung fame. So easy is it to operate that anyone who has never seen the machine before can learn to handle it competently within a matter of minutes. The only step preparatory to its operation is the typewriting, or drawing, on its famous Mimeograph stencil sheets—the Mimeotype and the new Cellotype. Whatever letters, bulletins, forms, questionnaires, maps, charts, diagrams, etc., are wanted may be had by hundreds and thousands. And the remarkably low running cost is even less today than ever before. Clean-cut reproductions always, in any quantity desired. Privacy for your confidential matters. Write today for full particulars to A. B. Dick Company, Chicago, or to branch offices in principal cities.

MIMEOGRAPH

EDISON-DICK
MIMEOGRAPH
CHICAGO

A DOMINANT FACTOR

Industry in Los Angeles County enjoys these advantages:

* * * *

Year 'round equable climate, providing ideal living conditions and high working efficiency, low building and maintenance costs.

* * * *

Contented Open-Shop Labor.

* * * *

Largest local market and most efficient distributing center in the entire West.

* * * *

Unexcelled transportation, giving favorable access to the markets of the Pacific Coast, to Atlantic and Gulf States and to the undeveloped export markets of the Far East.

* * * *

Abundant industrial power, natural gas and water at low rates.

NATURE'S generosity has had much to do with the tremendous growth of population and industry in Los Angeles County. But there is another vital contributing factor. It is the spirit and vigor of Youth... the vibrant enthusiasm for achievement, inspired by opportunity and environment. It is observed and commented on by business analysts and leaders of industry. It is virile...real...tangible.

It has made Los Angeles County the biggest concentrated market on the Pacific Coast. It has given to Los Angeles in 1929 the highest bank clearings of any city on the Western Slope. It has increased industrial production 163 percent and harbor tonnage 6,000 percent in ten years.

It resulted last year in the purchase, in 11 Southern California counties, of 48 percent of all new automobiles sold in the three Coast states. It has caused Los Angeles district to be chosen during the past 24 months as the location for West Coast factories by Goodrich, Firestone, Willys-Overland, Willard Storage Battery, Pittsburgh Plate Glass, Proctor & Gamble, Crane, and National Lead Companies.

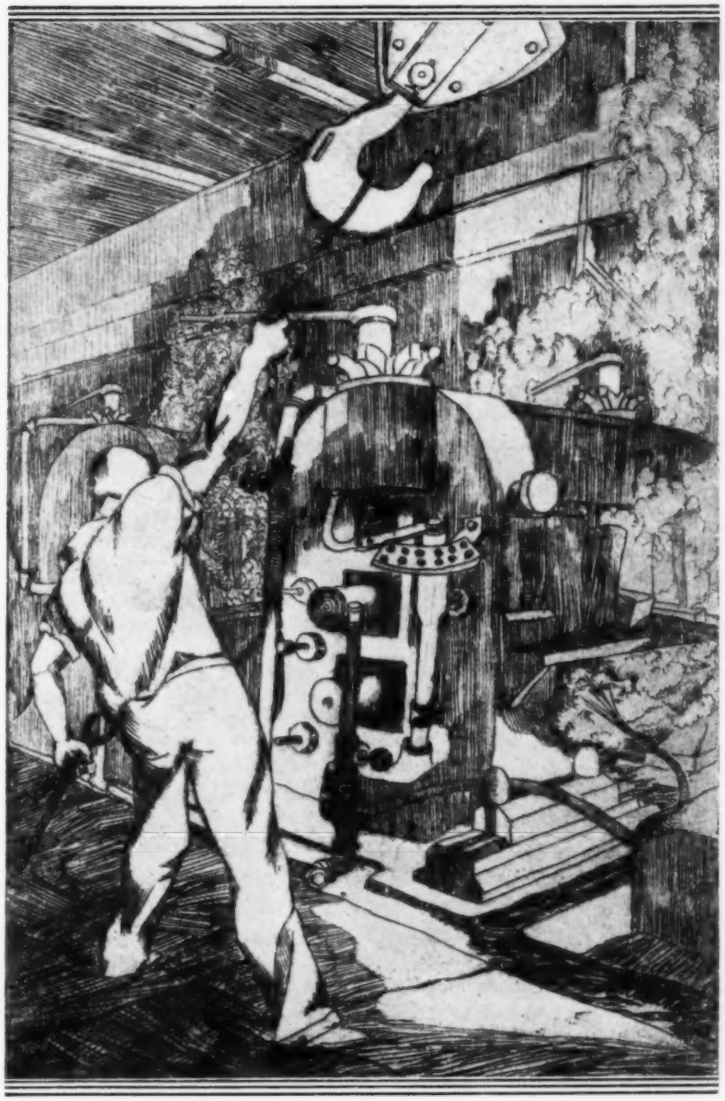
It is a factor to be reckoned with for it cannot be denied its objective. It is the fundamental of success...it is the spirit of Los Angeles County.

For specific surveys and detailed information regarding industrial opportunities, address Industrial Department, Los Angeles Chamber of Commerce.

Industrial

LOS ANGELES COUNTY

IF YOU WANT BETTER LABOR



CLEVELAND'S workers offer exceptional advantages to business enterprises. The supply is ample . . . over 200,000 men and 25,000 women in Cleveland are engaged in manufacturing occupations; over 275,000 men and women are available in Cuyahoga County.

¶ This labor is skilled and versatile, for diversity of industry in many medium size shops has developed ability and initiative in a degree not known where the production line cramps experience.

¶ The standard of intelligence among these workers is high. They think in terms of output and are paid on that basis. They are cheap in cost per unit, not per hour.

¶ Competent organizations assist in their orderly distribution, and so equalize demand with supply. Labor is one of ten important factors in the selection of a business location. For specific data regarding labor supply and cost at Cleveland, address this Bank.

GUARDIAN TRUST COMPANY
CLEVELAND, OHIO
RESOURCES MORE THAN $165,000,000

G. T. Co.

XUM

An Equity of $1,300,000

FROM A NEW IDEA—IN A CROWDED FIELD

Established in a Year

YEARS before our business was founded we were convinced that able merchandising was the keystone of marketing, and that without it the force of advertising and selling was dissipated:

In 1926 our search for a new Merchandising Idea in the drug and cosmetic fields resulted in a promising discovery.

Extensive analyses, consumer, trade and technical, were made. In due course we took the idea, the findings and the product to a client, and recommended the formation of a company. Our client formed the company. We acquired a minority interest.

Preparations for sustained marketing began in the summer of 1928. A new package was designed and adopted. The care that went into this detail has paid enormous dividends. Further research, including a test campaign, was conducted.

In the spring of 1929, the New York Metropolitan district was opened. An original sales plan was organized,—old in fundamentals, new in method. A new type of advertising was employed. Sampling was conducted on a scale and in a manner without precedent, yet in harmony with proven principles.

In June, the "Saks Plan"—named from the store which first used it—Saks Fifth Avenue—brought 12,000 women into that store in answer to one message. In view of this response, national advertising in class publications was begun in August.

Within three months, 200 of the best stores in the United States adopted the "Saks Plan", sent 1,500,000 duplicates of the Saks message to their credit customers and brought in 600,000 most desirable prospects to try the product.

Sales multiplied; store displays and selling cooperation beyond our most sanguine hopes followed.

Again, test campaigns were conducted. Four different appeals were given the same chance to produce results. Then the 1930 national plan was formulated. A new system of distribution was instituted with 120 of the foremost wholesalers, who culled from their ledgers the best 25,000 retail drug store names, and organized a follow-up plan for their 1600 salesmen.

In November an extensive trade paper campaign was begun.

On January 10th, national distribution among the 25,000 independent stores and 2,000 chain stores was completed—not by sale—not by consignment—but by the simplest, soundest plan possible.

As planned on July 1st, new prices, making possible a universal market, were adopted on January 1st.

National advertising was scheduled in twelve publications with 16,127,000 circulation, commencing with the February issues.

Daily sales in January ran far above the 1929 peak. The present rate of acceleration is beyond maximum estimates.

Our client's business, with less than one year of active marketing behind it, today represents an equity of fully $1,300,000 . . .

THESE are some of the facts about the development of AMBROSIA, the pore-deep liquid cleanser.

Our part in this work was made possible by a new policy of advertising service conceived in 1923 and made effective a year later when this business was founded:

The policy of providing a wholly unbiased, finely balanced service in creative advertising that carries its full share of the load of the sales dollar, and performing all the functions of an advertising agency on a basis which divorces our fee (profit) from variations in the size or allocation of the client's advertising appropriation.

The AMBROSIA project is exceptional. Few products or ideas possess such potentialities, though many have possibilities that are overlooked. Few agencies have clients of the caliber of the AMBROSIA management, whose imagination and ability made every step possible. But this work does tend to demonstrate what may be accomplished if there is nothing to deflect the agency's interest from whatever course of action is best for the client.

COWAN & DENGLER

ADVERTISING • MERCHANDISING • SALES COUNSEL

NEW YORK

At the home office of the Insurance Company of North America in Philadelphia, the architects, Stewardson & Page, had accomplished a superb piece of work in Georgian interior design. Pictured at the left is the directors' room, showing the great Danersk table of Duncan Phyfe design.

"George Washington *and* Lafayette *came to us for insurance policies*

—but that's only part of the story we want our FURNITURE to tell"

BEFORE the Insurance Company of North America was founded, way back in 1792, insurance companies used to operate the fire departments.

It was customary to place a tell-tale mark above the door of every house insured and if the firemen, arriving at the smoky scene of a fire, found this particular house was not numbered among the risks of the company, they would promptly depart.

The first stock insurance company in this country, the Insurance Company of North America, led the way to many important reforms and year after year has added to its reputation for fair dealing.

When its president asked us to provide its offices with furniture, which would convey to their agents and employees as well as to visitors an adequate impression of the staunch integrity of this fine old institution, we weighed the appropriateness of many different periods—and finally went back to the great furniture of Duncan Phyfe for inspiration.

We built the largest Duncan Phyfe table in the world, an oval mahogany piece around which twenty-five people can be seated in roomy armchairs facing each other. Also Duncan Phyfe curio cabinets to enclose rare old ship models, interesting Early American firemen's helmets, and such priceless documents as the policies long ago issued by the company to George Washington and to Lafayette.

We thought it particularly fitting that one room should contain exact replicas of the desk and sofa used by Washington during the term when he presided over the First Congress. In another room, authentic reproductions of the chairs in which the Signers of the Declaration of Independence sat, on the day they penned their courageous defiance to the mightiest nation of those times. Thus room after room was filled with furniture appropriate and significant.

The executives of the Insurance Company

of North America have repeatedly volunteered the enthusiastic comment that this meaningful and impressive furniture is successfully creating an atmosphere of authority and dependability.

Why don't *you*, too, enrich your office with furniture that will do justice to the personality of your business and the high character of your business methods? We carefully work out such problems with the architect, and with the officers of large institutions, and we take the same interest in furnishing a small individual office. We should be glad to have you write to us, telling of the problems presented by your own office.

DANERSK FURNITURE

ERSKINE-DANFORTH CORPORATION—*Designers and makers of choice furniture*

NEW YORK: 383 MADISON AVENUE CLEVELAND: 11129 EUCLID AVENUE CHICAGO: 620 NORTH MICHIGAN AVENUE

DISTRIBUTORS—BOSTON: 132 NEWBURY STREET—LOS ANGELES: 2869 WEST 7TH STREET

The 20-foot all-mahogany Chris-Craft runabout is priced at $1895; the 22-foot runabout at $2195 and $2595.

A TREASURE chest of bountiful health lies open to the Chris-Craft owner. Life on the water offers a multitude of thrills and pleasures not known on land.

One may splash about at the swimming raft, take dinner at the distant yacht club, then swing past a dozen miles of shoreline to evening social affair in remarkably short time.

Chris-Craft days are full of joy. Go fishing, step out and win a race, entertain guests in delightful comfort, or just loiter among wooded islands. A whole new range of pleasures begin at the water's edge and all are spread before the Chris-Crafter for his choice.

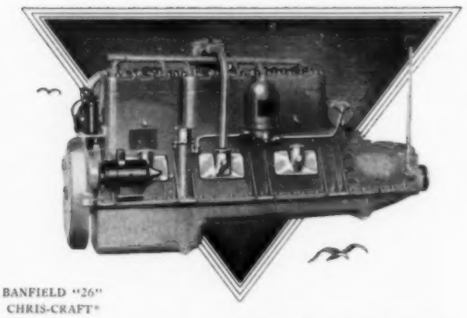
Distinctive among the 24 models of the 1930 Chris-Craft fleet are the 20 and 22-foot runabouts. They are luxurious, deep-cushioned, 9 passenger Chris-Craft. They go like the wind, yet are easily controlled by boy or girl. They start, stop, steer turn and reverse like an automobile, yet they are infinitely more flexible.

Priced at $1895, the 20-foot Chris-Craft runabout is the lowest priced Chris-Craft ever offered. The 22-foot Chris-Craft is listed at $2195 and $2595, offering a life-time of dependable water transportation.

Illustrated catalog may be had by writing Chris Smith & Sons Boat Co., 123 Detroit Road, Algonac, Michigan.

24 CHRIS-CRAFT MODELS
Runabouts—Sedans—Commuters—Cruisers—Yachts
20 to 48 feet—$1895 to $35,000

Chris-Craft
World's Largest Builders of All-Mahogany Motor Boats



BANFIELD "26"
CHRIS-CRAFT*
6 Models
CORSAIR "36"
GAR WOOD "40"
HACKERCRAFT*
MATTHEWS*
MINETT-SHIELDS
NORTH STAR
ROBINSON SEA GULL
(Twin Installations)
SEA LYON "40"*
STEPHENS
WHEELER "PLAYMATES"*
Foreign
BRITISH POWER BOATS
OSBORNE-CRAFT
(ENGLAND)
CLAUS-CRAFT (GERMANY)
DESPUJOLS (FRANCE)
*Optional

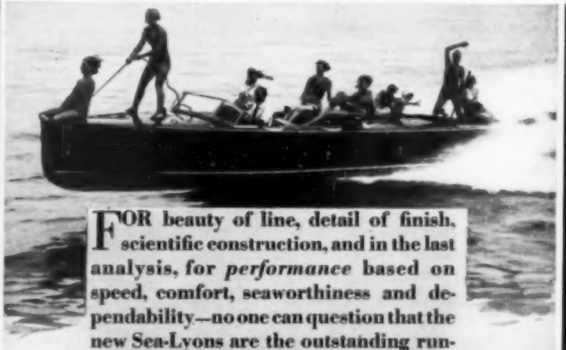
SCRIPPS
Powered

The wide acceptance of SCRIPPS is best expressed by the ever growing list of standardized craft offered with SCRIPPS as standard or optional equipment.

Ten models—15 to 200 Horse Power.
High speed and medium duty.
Interesting literature will be mailed upon request.

SCRIPPS MOTOR CO., 5844 LINCOLN AVENUE, DETROIT, MICH.

SCRIPPS
• THE MOTOR THAT CROSSED THE ATLANTIC •



FOR beauty of line, detail of finish, scientific construction, and in the last analysis, for *performance* based on speed, comfort, seaworthiness and dependability—no one can question that the new Sea-Lyons are the outstanding runabout value in the quality field for 1930.

May we send you "Our Vanity Book"?

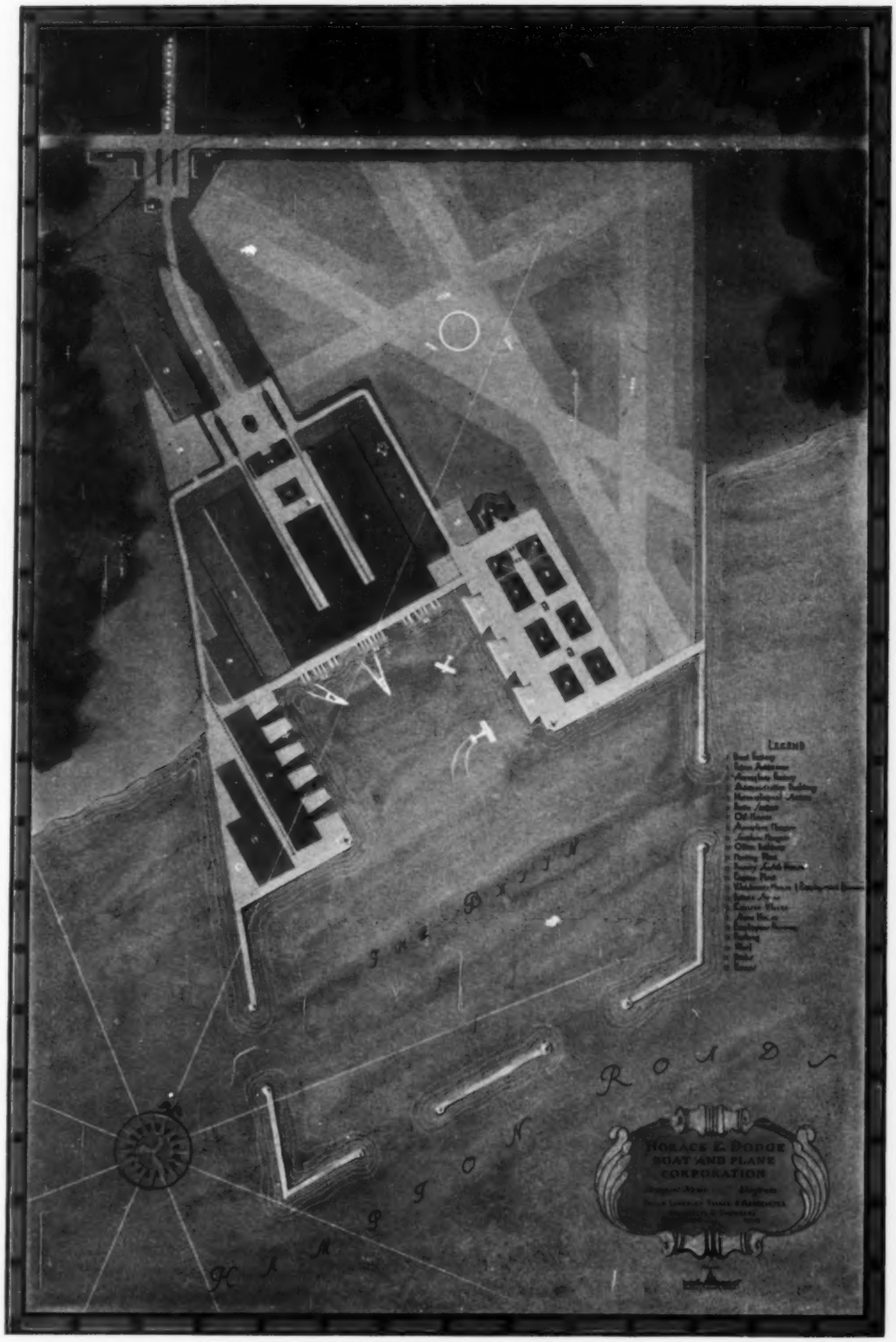
SEA LYON "30" . . .	$2,675
SEA LYON "35"	2,975
SEA LYON "40"	4,650
SEA LYON "45"	5,950
SEA LYON "46"	6,500
SEA LYON "60" . . .	12,500
COMMUTER	30,000

SEA-LYON

A limited number of excellent sales territories available

HOWARD W. LYON, INC.

HOTEL BARCLAY • 532 LEXINGTON AVE., at 48th ST. • WICKERSHAM 6432-3 • NEW YORK



The modern home of the modern motor boat

To the millions who yearn for the uncrowded romance of bay and river, lake and sea, the pleasure of boating has too long been denied by the slow and costly building methods of former years. Today, facing proudly out over the waters of Virginia's Hampton Roads, the new Dodge plant bears witness that the boating business has come of age.

Nothing has been spared, no possible need unheeded, in building for the future of this growing industry. A yacht basin and airplane landing field of superlative design prepare for vastly greater future needs.

Most of all, this modern boat plant that builds its boats upon tidewater, was designed for one clear purpose—that is, to build boats as fine and beautiful as men and materials can make them, but as efficiently and therefore as low in cost, as modern mass production facilities permit.

To those who know boats, it may sound unbelievable that a boat of Dodge quality can be built for less than a thousand dollars. Yet it is true—a trim and beautiful 16-foot boat, staunchly and dependably made of oak and mahogany, with a speed of 25 miles an hour, is priced at $945. It is merely typical of a fleet of Dodge Boats ranging in size to 28 feet, with a speed of 45 miles an hour, and at a price of $4,500.

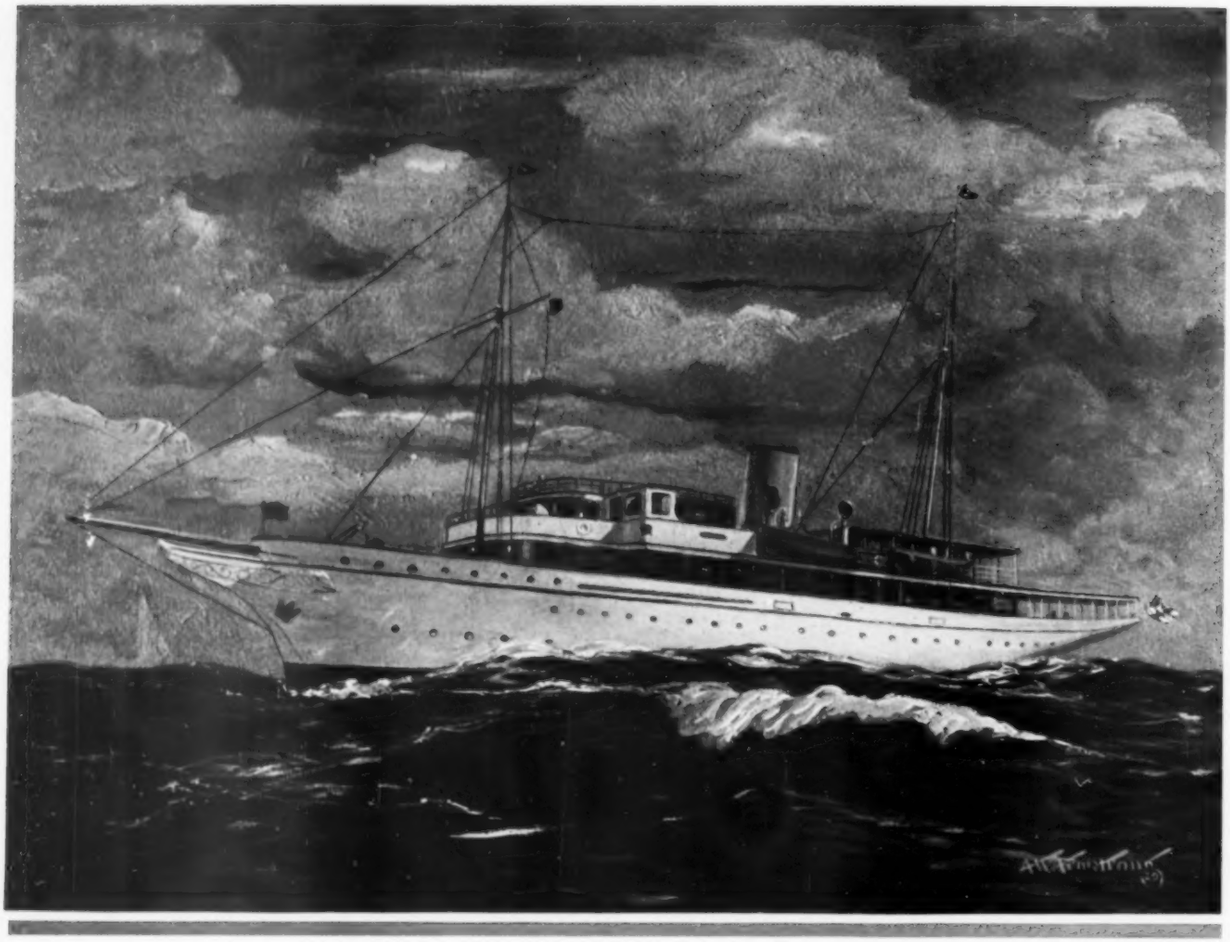
Write for a catalog of the new Dodge 1930 fleet, with illustrations, specifications and descriptions of boats—open and closed, including the cruiser and de luxe models.

DODGE BOATS

HORACE E. DODGE BOAT AND PLANE CORPORATION

NEWPORT NEWS, VIRGINIA

SALES OFFICE, 3 EAST 52ND STREET, NEW YORK, N. Y.



NAKHODA

The "Baltimore Clipper" of 1930—graceful, fast and utterly seaworthy. Every inch of her two hundred thirty-six feet has been laid out with painstaking care by her designers, Cox & Stevens, Inc. and John H. Wells, Inc. Every mould, frame and plate of her sturdy steel construction has been fashioned by shipwrights of the old school. Nakhoda is all yacht — ready and able to carry her owner and his guests to any port of the seven seas, fleetly, luxuriously . . . To the initiate these features are of interest: Over-all length 236 ft. Beam 34 ft. Depth 19 ft. Powered with two 1100 H. P. Winton Diesel Engines. Cruising speed 15 knots. Cruising radius 7000 miles. Equipped with Sperry stabilizer, gyro compass, metal mike and Fathometer . . . Built by The Pusey and Jones Corporation for Fred J. Fisher, Esq., of the New York Yacht Club.

Distinguished yachts recently launched at the yards of The Pusey and Jones Corporation:

RENE
Length 236 feet
Owners:
THE RENE CORPORATION
NEW YORK
Architects:
COX & STEVENS, Inc.
JOHN H. WELLS, Inc.

CAMBRIONA
Length 236 feet
Owner:
W. O. BRIGGS, Esq.
DETROIT
Architects:
COX & STEVENS, Inc.
JOHN H. WELLS, Inc.

LOTOSLAND
Length 204 feet
Owner:
E. A. DEEDS, Esq.
DAYTON
Architects:
COX & STEVENS, Inc.

THE PUSEY AND JONES CORPORATION

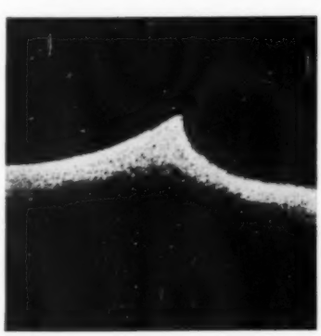
Shipbuilders Since 1848—WILMINGTON, DELAWARE

Recognition for THE MAN WHO KNOWS HIS BOATS

Pleasure craft from the shops of the raceboat king, that are built side by side with the Miss Americas, have always had the reputation of being the softest riding of all speed boats. And the 1930 models, completely redesigned, attain new heights of riding and driving ease, represent new triumphs in beauty and luxury.

Equally desirable, perhaps, ownership of a Gar Wood boat identifies to the world of thorough-going sportsmen, the man who "knows his boats".

Everywhere you hear men (and women, too, of course) saying, "I have a Gar Wood" with exactly the same prideful inflection they would employ in remarking, "Yes, this is a Stradivarius."



So, you owe it to your sporting self to introduce your weather eye to a pleasurable new sensation. Here, in glistening mahogany and chrome-plated bright work, is the master interpretation of what a boat can be!

Ten New Models—30-55 m. p. h., $3,150-$12,950

GAR WOOD INC.

THE GREATEST NAME IN MOTORBOATING

415 Connecticut Ave., Detroit, Mich. 1860 Broadway, New York City

Gar Wood, Inc.,
415 Connecticut Ave., Detroit, Michigan

Gentlemen: I shall be glad to have your booklet on the 1930 Gar Wood Boats—without obligation, of course.

Name_____

Street or R. F. D._____

City or County_____ State_____ P-3-29

GENTLEMEN'S

Kashmir Coats

FOR TRAVEL, MOTORING

AND COUNTRY WEAR

Kashmir, the most practical, comfortable and fashionable of coating fabrics for travel, motoring or country wear, is presented by us in the correct double-breasted Polo model

The extensive experience of Hickey-Freeman in tailoring this notable fabric enables them to produce for us coats of the highest character

F. R. TRIPLER & CO.

Outfitters to Gentlemen · Established 1886

MADISON AVENUE AT 46 STREET

New York

will tell how it comes that he is allowed to sell *boutonnières* to the traders, rent binoculars to the gallery visitors, and variously ply his trade within the sacrosanct precincts of the Exchange. Perhaps no one knows. Perhaps Jake Scherrick fears that too much curiosity might awaken some long dormant rule. At all events, this lone Stock Exchange merchant goes his way unmolested, unostentatiously jingling his handful of quarters, thinking no one knows what thoughts about his madly scrambling neighbors.

Cabala

Casual as are the ways of the New York financial reporter, he shares with all reporters a consuming desire to break into the front page. This can most readily be done by working into his stories on every possible, and many impossible, occasions the great name of John Pierpont Morgan. The Hearst papers are especially fond of bolstering up their financial news by references to Morgan, the Great Banker. For some time readers of the Hearst New York *American* have been impressed by the classic initials, "J. P. M.," signed to a daily column of stock market gossip. As every New York journalist knows, but as every reader of the *American* does not know, "J. P. M." stands for James P. Maher, shrewd, lanky, genial financial editor of the *American*, who answers telephone calls with a hearty, "Jim Maher speaking . . . " His distinguished initials have their value. To naïve readers they no doubt summon up a picture of Mr. Morgan at his desk in 23 Wall Street, laboriously composing his daily tipster column for the *American*.

Hatless head

The hats of Mr. William G. Clyde, who heads the Carnegie Steel Co., observe the normal variations of the season. In winter Mr. Clyde's derby is seen in Pittsburgh's Atlantic Street. In summer, a soft and expensive Panama makes its appearance. But never, it is said, do any of Mr. Clyde's hats find their way to Mr. Clyde's head. Whatever the weather, be it a hailstorm or 100° temperature, Mr. Clyde walks hat in hand. The habit has its advantages as well as its dangers. He is never unintentionally rude to friends encountered on the street. He is relieved of the necessity of constantly tipping and removing his hat, a release which dwarfs such incidental inconveniences as pneumonia and sunstroke.

Coast joke

In 1923, Mr. Kenneth R. Kingsbury, president of Standard Oil of California, was on his way east across the continent. At the first station, a bag of onions was delivered to him. At every stop thereafter, he received another bag of onions, all gifts from his good friend Herbert Fleishhacker, San Francisco banker.

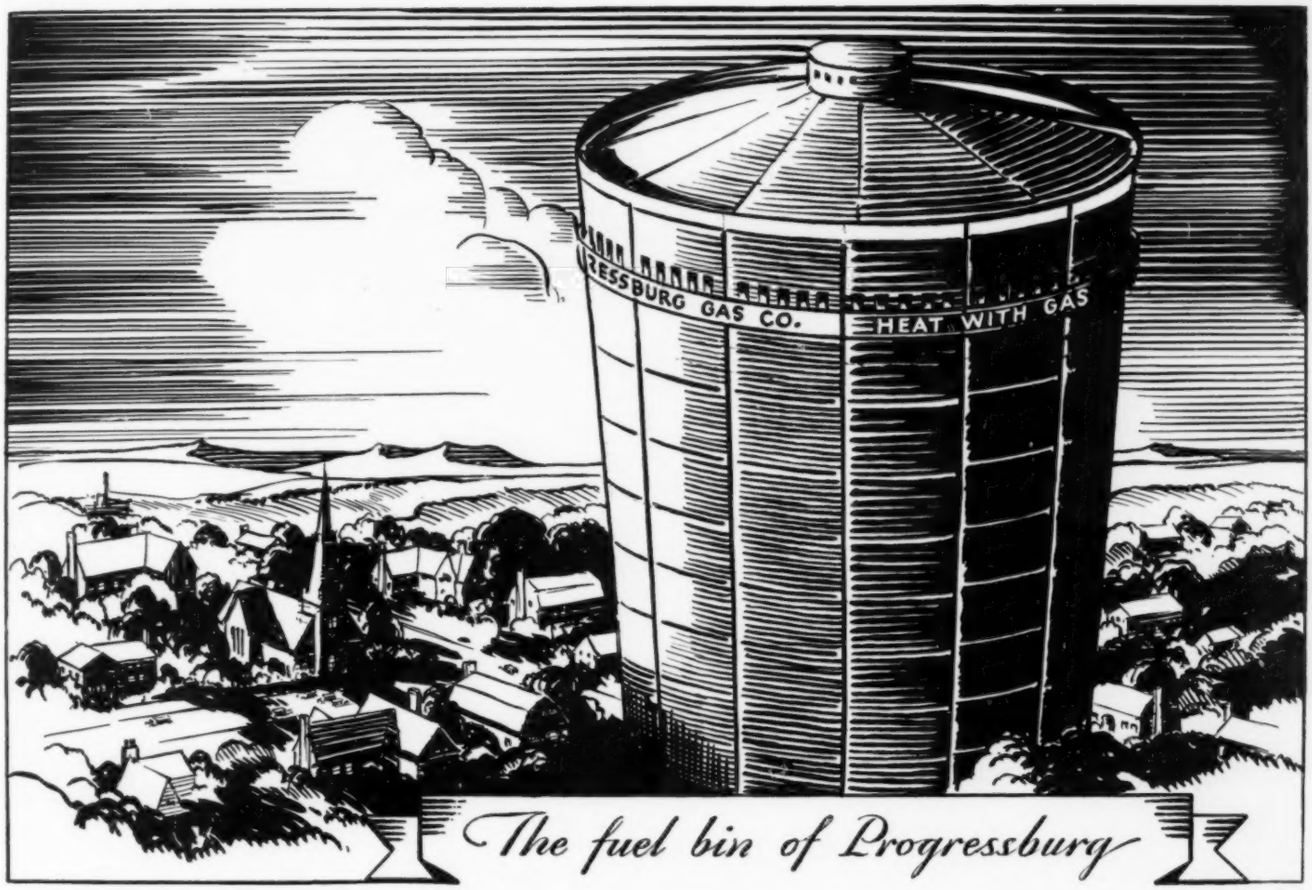
This pungent jest Mr. Kingsbury did not forget. Not long after the onion episode, a liveried bugler appeared at the door of Mr. Fleishhacker's bank (the Anglo & London Paris National). The bugler preceded and announced two water buffaloes and several crates of lesser animals. All had been sent C.O.D. by Mr. Fleishhacker's good friend, Mr. Kingsbury.

Parsons' fan mail

To the veteran writers of the *Saturday Evening Post* comes nearly as much fan mail as arrives at the gilded mail box of a Hollywood star. Some of it is crank mail, full of complaint; some is extraordinarily acute. Mr. Floyd W. Parsons, who contributes much of the *Post's* quasi philosophical, quasi scientific folklore, tells of receiving ten letters correcting his measurement of the diameter of a human hair. The fault, by the way, did not lie with Mr. Parsons but with the G. E., who made a slip of 1/10,000 of an inch.

Mr. Parsons has many interests outside of human hair. As editorial manager of Robbins Publishing Co., he contributes a bimonthly department, "Everybody's Business," to *Advertising & Selling*. Of himself he will say that he started the Florida fashion of running around naked, and that he has favored the *Post* with more than 400 dissertations. Of the 400, one was returned because it conflicted with the *Post's* advertising policy; one was returned for revision because it offended the *Post's* meat-packer friends. The rest Mr. Lorimer sent to press without dotting an "i."

These triumphs Mr. Parsons will recall without reluctance, adding candidly: "I tell the truth as I see it." He sees much truth, distributes it freely.



GOOD WILL DESERVEDLY EARNED

TENS of thousands of homes are today being heated—evenly, cleanly, conveniently—by equipment designed solely to burn gas.

This newer utilization of gas has increased the revenue of progressive Gas Companies and—equally important—has enhanced their standing in the community.

The added sales of gas, due to the installation of Bryant Heating equipment during 1929 alone, amounts to four and one-half billion cu. ft., enough to supply the city of Minneapolis for one year. » » » » » » » » » » »

The completely satisfied user of gas heating—invariably an influential citizen—now looks with friendly eye toward his Gas Company, whence he receives a valuable and highly appreciated service, attainable from no other source.

Larger gas production is tending to lower its cost; better public relations are lowering the cost of selling gas.

These economies are benefiting the customer and shareholder alike.

A brilliant future awaits the industry.

BRYANT GAS HEATING

© B.H.M.C

THE BRYANT HEATER & MANUFACTURING CO.
17881 ST. CLAIR AVENUE • CLEVELAND, OHIO

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HORNBLOWER & WEEKS

ESTABLISHED 1888

BOSTON NEW YORK CHICAGO CLEVELAND
DETROIT PROVIDENCE PORTLAND, ME. PITTSBURGH

Members of the New York, Boston, Chicago, Cleveland, Pittsburgh and Detroit Stock Exchanges and the New York Curb Exchange

Tailoring to Tycoons

Accredited supremacy in the art of putting individualism into gentlemen's attire for all occasions.

Alfred Nelson Co.

Established 1888

580 FIFTH AVE. NEW YORK

Statistics

Wealth of the Sea

WHILE scientific pessimists have been calculating the date of the ultimate exhaustion of the world's natural resources, their optimistic colleagues have been busy hunting for new treasure houses. One of them thought to look, so to speak, down the drain. He found in the world's catch basin, the ocean, wealth so great that it cannot well be calculated. From time beyond the calculation of geologists, the gentle rains from heaven have been carrying into the sea billions of tons of mud each year. Submarine volcanoes and fissures have for ages past belched into the ocean minerals from within the earth. Now the ocean bed is a huge deposit of insoluble natural wealth; the 331,522,100 cubic miles of sea water hold in solution or suspension yet other hoards.

One cubic mile of sea water (4,160,000,000 cubic meters; 4,710,000,000 tons) contains:

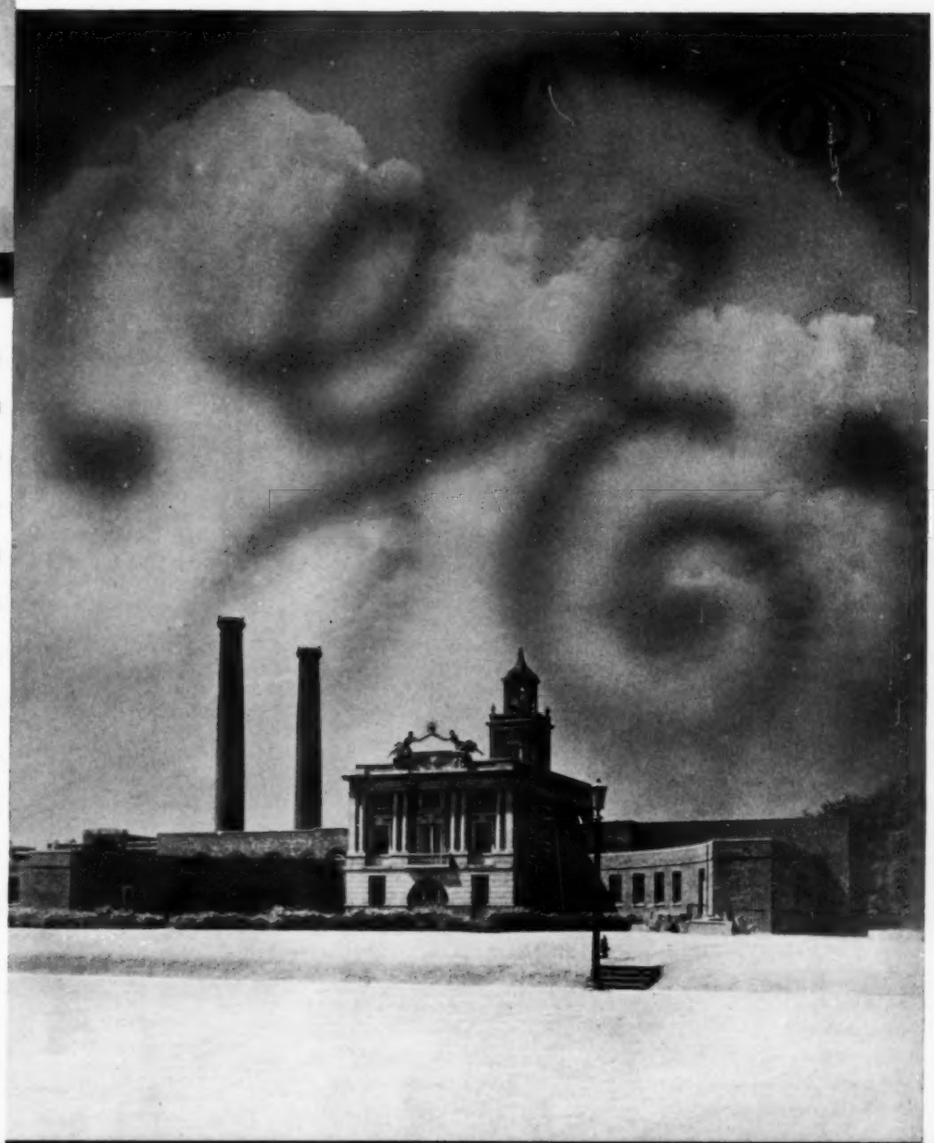
Salt	123,173,230 tons
Magnesium chloride	17,930,970 tons
Magnesium sulphate	7,809,180 tons
Calcium sulphate	5,934,600 tons
Potassium sulphate	4,064,730 tons
Calcium carbonate	579,330 tons
Magnesium bromide	357,960 tons
Dissolved organic matter	141,300 tons
Fluorine	1,374 tons
Barium	916 tons
Albumen	2,800 tons
Iodine	100 to 12,000 tons
Arsenic	45.8 tons
Silver	45.8 tons
Gold	18.84 tons
Radium	4.8 grams

Science has not yet found a way to dissociate these mineral and organic treasures from the tremendous mass of water that surrounds them. But meanwhile, sea plants and animals are doing it, and science may learn from them how it may be accomplished. Seaweeds and sponges have much higher concentration of iodine than the water in which they live. Sponges, coming from sea water of 2,380 parts of iodine per billion parts of water, themselves contain 3,870,000 parts of iodine per billion parts of water; lobsters, 11,590. Very little strontium can be detected in sea water, but the skeletons of certain microscopic marine plants are nearly pure strontia. Oysters collect manganese and copper. Certain other curious animals in the sea collect vanadium, nickel, cobalt, lead, and arsenic. And if science cannot learn from these animals how the distillation or concentration is accomplished, perhaps these organisms can be harnessed to do the work for us.

The ocean floor has been receiving insoluble deposits for ages. In its abysmal basins there lie 275 thousand million tons of nitrate and 75 thousand million tons of phosphate. Iron, alumina, lime are abundant there. Manganese, becoming scarcer on land, occurs on the ocean bottom as nodules of highly concentrated manganese dioxide—no one knows the tonnage. Elements whose chlorides, oxides, sulphides, carbonates, and phosphates are insoluble in water must exist in vast quantities in the ocean bottom mud. These include silver, whose chloride is insoluble, and most of the heavy metals.

As a manufacturer of organic or living substance, the ocean is equally impressive. Of the 92 chemical elements, 34 besides the inert atmospheric gases have been definitely found in sea water. These include all those which are known or suspected to be necessary for life. (Known to be necessary: oxygen, hydrogen, carbon, nitrogen, phosphorus, sulphur, iron, calcium, magnesium, sodium, potassium, manganese, chlorine. Necessary for some forms of life: iodine, copper, strontium, vanadium, boron, silicon. Suspected: zinc, cobalt, nickel, arsenic, fluorine.) Energy is required for the manufacture of organic matter by plants. Of the radiant energy of sunshine, the ocean receives 70.73 per cent of the earth's quota. This is absorbed by microscopic plants, which are estimated to grow wet vegetation to the extent of 4,000 tons per square mile of surface of sea per year in the English Channel. Expressed in terms of dry sugar, the manufacture of food by plants is equivalent to 715 tons per square mile per year in the English Channel. A small part of this vegetation becomes animal substance via food supply. The world production of fish useful to man is, partly known and partly estimated, 27,295,606,300 pounds annually, valued at $1,018,303,000, of which amount

. . . THE UNIVERSITY OF LIGHT



High on the hills east of Cleveland, Ohio, looking out across a teeming city, is Nela Park—Lighting Headquarters of the World. Here, surrounded by great trees and broad expanses of lawn, suggestive of a college campus, the scientist works in his laboratory on tomorrow's light. Here, the illuminating engineer plans lighting for increased productivity, improved products and greater safety. Here, comes the world to learn what is new in illumination for better merchandising, eye conservation, comfort, beauty and health, as shown by the Nela School of Lighting. Here, in the shadow of the greatest name in electricity, are formulated the ideals of quality and service of a great product. National Lamp Works of General Electric Co., Nela Park, Cleveland, Ohio.

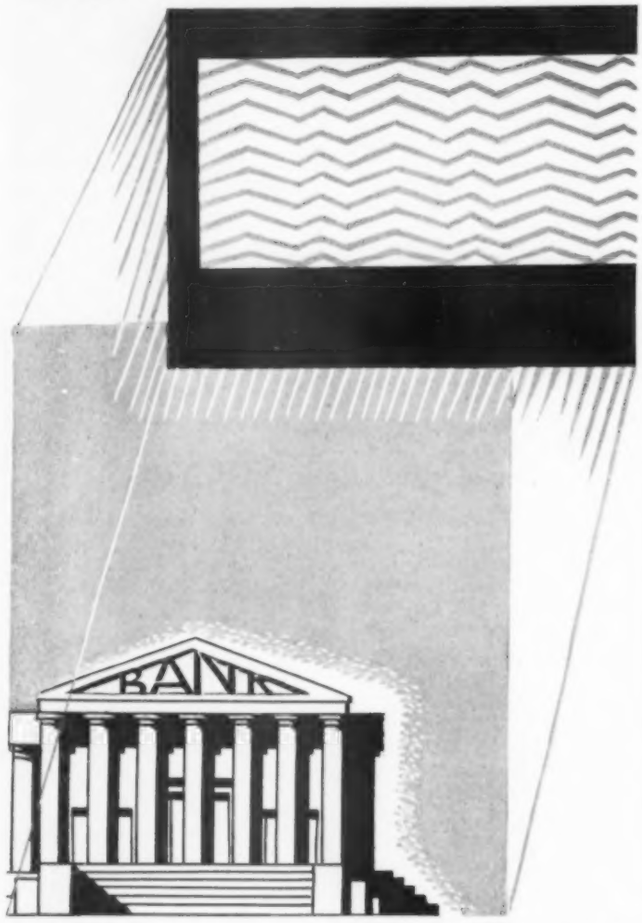
GENERAL ELECTRIC

MAZDA LAMPS

Join us in the General Electric Hour, broadcast every Saturday at 9 p. m. E. S. T., on the Nation-wide N. B. C. Network.

XUM

An impression of stability and resources was what led you to your bank. Surely that impression is important enough to be reflected in your checks.



Checks made on La Monte Safety Paper do reflect the soundness of your banking connection. Their rich handsome appearance makes them, everywhere, worthy representatives of your bank and of you. They convey an unmistakable atmosphere of dignity and standing which instantly captures attention and respect. That is why La Monte is the recognized standard in check papers and is used by 60% of the nation's progressive banks. George La Monte & Son, 61 Broadway, New York City.

The wavy lines instantly identify La Monte National Safety Paper—the* standard *in check papers.

LA MONTE
NATIONAL SAFETY PAPER
FOR CHECKS

Statistics—*Continued*

the United States produces 3,000,000,000 pounds; Canada, 1,075,000,000; England, 1,698,830,000; Norway, 1,758,000,000; Siam, 2,000,000,000; Japan, 5,700,000,000. No use is now made directly of plankton or microscopic vegetation, but the amount of this is vastly greater than that of fish. Plankton or microscopic plants contain 10 to 13 per cent albumen, carbohydrate varying from 20 to 80 per cent, fats 1.3 to 2.3 per cent. Substance of this composition should be valuable for direct feeding of land animals.

As a source of power, Georges Claude has shown that a vast amount of power is available from the sea if advantage is taken of the difference in temperature between top and bottom of ocean in the tropics. Since the ocean's abyssal water is always near the freezing point, there is a superabundance of refrigeration to supply the whole world forever.

Exploitation of the ocean resources may be distant, but it is not fantastic. We are exploring Antarctic wastes, making rockets to shoot across the ocean, perhaps at the moon. We are beginning to make useful things from corn stalks. The ocean is at our door.

What few children know

About soft drinks . . .

In 12,000 bottling works in 1929, 120,000 employees made 120,000,000,000 bottles of soft drinks which were sold to thirsty U. S. citizens for $650,000,000. Into the making of this effervescent ocean went 300,000 tons of sugar.

About razors . . .

Early in January of this year, the 115,272,539th (and last) old model Gillette safety razor was delivered. Redesigned machines will turn out new razors, new blades, the latter at the rate of 2,700,000 a day.

About eagles . . .

Since the outbreak of the World War, Alaskan authorities have bought more than 35,000 pairs of talons, evidence of the killing of as many bald eagles, at a dollar a pair. The bald eagle is no welcome visitor to fox farms, salmon fisheries; hence, a bounty. There is no danger at present that the species will become extinct.

About beauty . . .

Women of the United States spend nearly $2,000,000,000 yearly in the quest of beauty; they lavish $400,000,000 of this in 34,000 beauty shops, where 140,000 persons are employed. And a great many of them find time to visit the 80,000 barber shops which the American male requires.

What a child may know

About automobiles . . .

In 1929 the automobile industry used the products of other industries to the following extent:

Product	*Percentage*
Rubber	85
Plate glass	67
Iron and steel	19
Copper	15
Lumber	18
Lead	27

About radio . . .

In 3,900,000 U. S. homes, new radio sets were installed during 1929, not including 218,000 radio-phonograph combinations. These new sets, together with parts and accessories for old ones (e.g., 71,000,000 tubes), were responsible for a retail business of $805,328,000.

About U. S. exports . . .

For the first time since 1921, the United States last year exported goods to a value in excess of $5,000,000,000. The year's total of $5,284,000,000 exceeded the exports of Germany by three quarters, of the United Kingdom by one half.

About Bibles . . .

The Bible, the world's best best-seller, is printed in 623 different languages and dialects. The British and Foreign Bible Society alone publishes 12,000 per day; has distributed more than 237,000,000.

About cigarettes

If American cigarette manufacturers applied themselves to the problem, without increasing their current rate of production (106 billion per year), they could, between Christmas and Christmas, make a package of 20, each of which would reach from the earth to the moon.

WHEN HORIZONS STAND ON END

To the manufacturer also comes the illusion that industrial horizons are up-ended as markets and methods of manufacturing shift their positions.

This is the natural outcome of the urge for speed, for low cost and volume production, but it brings new problems and intensifies old ones which impel the manufacturer as never before to seek the guidance of research and the assistance of the Engineer in synchronizing all the forces of production through improved plant layout, machinery arrangement or reorganization and the co-ordination of all operations—even to items of labor policy, handling and remuneration.

We have seen such a course lead to more profitable operation for some of our clients. Perhaps it would do so for you. It should be worth discussing.

J. E. SIRRINE & COMPANY
Engineers
Greenville South Carolina

John Stillman

ENGINEERING CONSULTANTS ON THE SOUTH

Off to business . . . . . at two miles-a-minute

HUNDREDS of successful, ever-energetic American executives have found in the airplane an indispensable business ally. Modern men whose affairs require their presence at several distant points in one day—or many places in a month—have turned with a sense of deep appreciation to private air travel.

Spartan builds airplanes exactly suited to this aggressive business regime. Spartans are amply powered for quick take-off, attain high speed in flight, yet will land slowly and as safely on the small, private field as on the airport.

Spartans are safe because of extreme sturdiness, fool-proof spinning qualities and slow landing speed . . . . economical because they can be operated for twelve to fourteen cents per mile . . . . and easy to fly because of basic stability and positive, sensitive control.

ILLUSTRATED BROCHURE SENT ON REQUEST

Spartan biplanes are offered with the choice of two engines: The 225 h. p. Wright "Whirlwind Seven" and the 165 h. p. Comet. Special equipment of each model includes dual controls, metal propeller, booster magneto, gasoline gauge, air-speed indicator, oleo gear, 30 x 5 Bendix wheels and brakes, adjustable stabilizer, navigation lights. Prices range from $7750 to . . . . . $5675 fly away Tulsa

SPARTAN AIRCRAFT COMPANY • TULSA, OKLAHOMA

WHEN WE DROPPED THE CANNAS AND IRON STAG

About 1900 father gave the iron stag his last coat of brown paint.

Somehow, although that stag was good as new, he seemed to have lost his job.

Once he stood for wealth and good taste—a badge for the public to admire. But the world grew full of a strange unrest. People were even saying things about the ways cannas should be planted—if at all. Some began to hunt old houses and live in them.

But still they sought the something the brave old stag and the brilliant cannas stood for. Something in the garden to tell the passing public of their good taste, their prosperity, their knowledge of graceful living. Something subtler—garden walks edged with larkspur and foxgloves—gnarled old apple trees carefully patched and mended—new-old ways of saying: "Here is a better home."

Today in a million gardens the old-fashioned flowers beckon to business. In great homes and small they are the badge of buying power.

Every year since 1922 the circulation of Better Homes and Gardens has grown faster than that of any other home magazine in America. Now it reaches a million, three hundred and seventy-five thousand families—85% of whom own their own homes.

77% of these homes are in cities, towns and suburbs within the retail trading areas of cities over 25,000. This single circulation—far larger than any other in the vitally interesting garden-making and home-owning field—covers better than one in every seven of all the owned urban homes in America.

"How-to-do-it" advice on gardening and home-making, on foods and hobbies, created this great circulation with its high buying power. No fiction—no forcing methods. Just natural healthy growth. For a real vogue is upon us—a vogue for better homes, better gardens.

BETTER HOMES AND GARDENS

DES MOINES, IOWA

XUM

CAUSE

It is characteristic of the forward-looking organization to seek to excel not only others but itself.

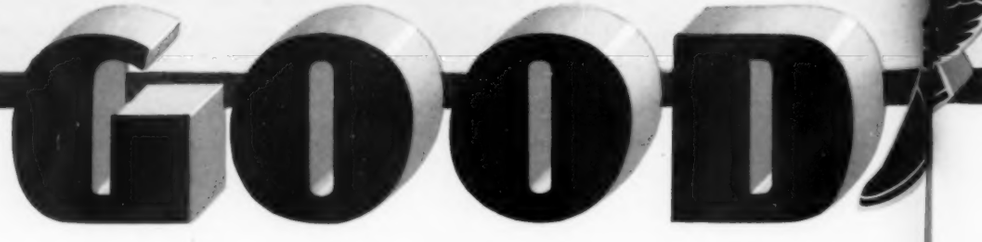
Thus, contemplating two years ago a proper celebration of Goodyear's Thirtieth Anniversary, Goodyear men set out to build the finest tire the world had ever seen.

Upon this task they focused the abilities of the largest and most experienced production and development departments in the rubber industry, striving regardless of cost for the tire that undeniably should be the masterpiece.

How well they succeeded has been revealed since in the Goodyear Double Eagle, which is, and always will be, our highest expression of that quality which protects our good name.

P. W. Litchfield

President



RESULT

The TIRE of TIRES

Since the introduction and wide acceptance of the Goodyear Double Eagle, many others have brought out copies of this outstanding tire, which, as copies always do, have served only to emphasize the unique value of the original.

GOODYEAR

Copyright 1930, by The Goodyear Tire & Rubber Co., Inc.

XUM

Luxurious Transportation

In the "gay" nineties of the last century a privately owned Hansom Cab was a mark of social distinction—the last word in vehicular elegance, both here and abroad

* * * *

PACKARD builds three complete lines of luxurious straight-eights—at three distinct ranges of price.

The Eight De Luxe lists from $4585 to $5350 at the factory; the Custom Eight from $3190 to $3885; and the Standard Eight from $2425 to $2885. Each is a Packard in every sense that thirty years of leadership has given to that famous name.

It is natural that the Packard Standard Eight should be the most popular car Packard has ever designed. A smaller Packard than the costlier Custom and De Luxe models, it still is a large and powerful car with its 90 horsepower motor and chassis lengths of 127½ and 134½ inches. Literally it has won new thousands to Packard ownership.

But as the demand for the Standard Eight has increased Packard has continued to think first in terms of quality. The factory knows no other way.

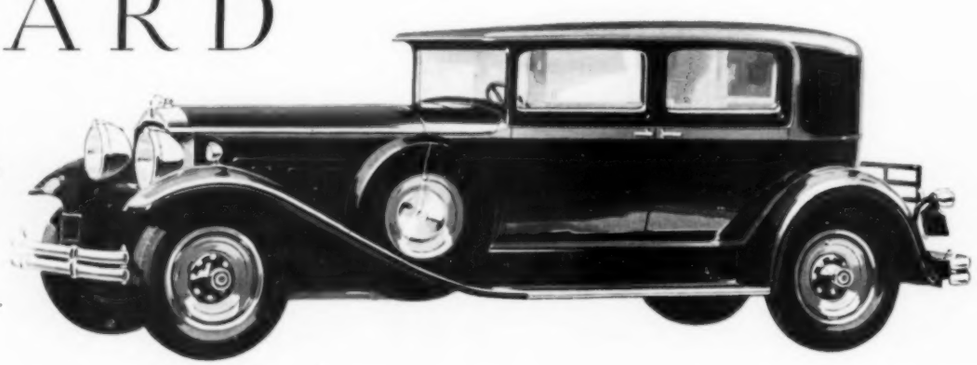
On Packard Avenue, the main thoroughfare within the Packard plant, hangs a great, permanent sign which reads "Quality First." Unseen by the public, it is a constant reminder to all Packard men, from chief executive to humble apprentice, that Packard's sole aim is the building of quality motor cars for a clientele of means and discrimination.

Packard quality has brought its just reward in increased business. But Packard is interested in quantity manufacture only so far as quality standards can be strictly maintained.

Each Packard car, from Standard Sedan to De Luxe Limousine with custom-coach work, carries the Packard crest and equally upholds the Packard reputation.

PACKARD

ASK
THE MAN
WHO OWNS
ONE



Volume 1

Fortune

Number 2

Contents for March 1930

Baker 38
Railroads 39
Maps 41
Jewels 49
South Bend 52
Wall Street 58
Advertising 60
Richest 62
Aluminum 68
Mitsui 72
Plastics 82
Bullfights 83
Kuhn, Loeb 89
Pie 91

• • •

Off the Record 16
Statistics 28
Transactions 94
Faces 97
Appendix 150

for April

Oil · · · Copper · · · Gold

New York on $50,000

Aviation · · · Twelve G. M. Executives · · · Circus

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XUM

THE FOREMOST AMERICAN BANKER ENDS HIS NINETIETH YEAR
MR. GEORGE F. BAKER—*BY LEO MIELZINER*

Railroad Consolidations, Old and New

An estimate of the value of the continuing Principle, together with a brief survey of the current Plan.

MR. WILLIAM H. WILLIAMS, quoting Virgil earnestly to an audience of traffic men gathered at St. Louis, seemed to forecast an event which was to come two months later. "Oh my companions," apostrophized Mr. Williams, "you who have suffered graver ills—for we are not unmindful of the trials through which we have passed—the gods will give an end to these things also." This was last October, and in December the Interstate Commerce Commission announced a Final Plan of Railroad Consolidation, in which Mr. Williams discovered that the Wabash, of which he is chairman, was suddenly elevated to a position beside the railroad powers of the very first rank. Whatever had been the trials of Mr. Williams and the Wabash, this might have seemed an acceptable End.

Actually, Mr. Williams knew very well that instead of having reached an End, he had but come to another Beginning. The problems of railroad consolidation, already dragged through a decade of costly controversy, were little nearer solution in December than they had been in December, 1928, or in December, 1921. Since the passage of the Transportation Act (1920), the eleven members of the Interstate Commerce Commission have held hearings in every corner of the country. Upon them have been spent hundreds of thousands of dollars of the Government's money and untold amounts of the railroads' money. To them have come hundreds of lawyers, hundreds of accountants, hundreds of railroaders. To them have come the nation's greatest bankers and most powerful executives. As a result of their maneuvers, consolidation plans have come and gone: the plan devised by William Zebina Ripley (1920) was modified (1921) into the official Tentative Plan, while the trunk lines produced in 1926 their own Four Party Plan. Now, at length, founded on ten years of plans and counterplans, appears the Commission's Final Plan. Already it is bitterly attacked; already the difficulties in its path seem tremendous, perhaps insuperable.

Why consolidate?

So difficult, so costly is this business of consolidating the nation's 1,000 railroad companies into a few great systems that one should be certain of the merits of the Principle before pondering too closely the merits of this or that Plan. Since the I.C.C. made public its last proposal, several voices have been lifted in pointed query. Commissioner McManamy doubts if "under present conditions the consolidation provisions would have become part of the law," urging that "never have the railroads collectively or singly been in such good condition as they are now." And Commissioner Eastman himself notes a tendency "to magnify beyond reason the possible advantages, to overlook . . . dangers. Such sentiment as appears to exist in favor of the consolidation of the railroads into a very few great systems is, I believe, largely artificial. There is very little sentiment of the kind among either shippers or railroad officers. For the most part, I think that it emanates from financial circles which are likely to reap large profits from the mere process of putting the roads together."

Such a charge, which has a possible extension to the merger trends in other industries as well, cannot be lightly set aside. If there is doubt in the minds of the commissioners as to the desirability of consolidation, the door is surely left wide open for reëxamination. Because in 1920 it seemed a benefit to the country to reorganize the railroads, we should not now be battling to effect that reorganization if it has ceased to benefit anyone but banks and banking houses. With the railroads earning better returns than ever before in their history, with all operating records at their peaks, why consolidate? To whose interest is it, and to whose injury?

Systems of equal strength.—The broad principle which underlies all the consolidation moves is that well-organized, well-balanced enterprises are better public servants than disorganized, unbalanced enterprises. It is thought more desirable that a large, efficient organization like the Pennsylvania Railroad should earn 4 per cent on its investment than that one line from New York to Philadelphia should earn 8 per cent while another line from Philadelphia to Atlantic City operates at a loss. The functions of a railroad are infinitely diverse; it carries pigs and cattle in rattling box cars, bankers and lawyers in smooth-running Pullmans. It hauls vast bulks of iron ore at a lumbering pace in open gondolas; it rushes tons of perishable fruit in ice-cooled refrigerator cars. Last summer over the Southern Pacific sped carloads of potted lilies, and last summer over the same railroad lumbered the Army's heaviest siege gun, weighing, with its railway mount, 730,000 pounds. The railroad stops at Coon Hollow at 11:45 P.M. to take a solitary traveler to neighboring Millersville, and it puts on a dozen extra trains for a big football game. It stretches a ribbon of track straight to the horizon to connect Texas prairies with the world, and it bunches complex ganglia of yards and sidings to bring tons of food and materials into Boston and St. Louis. The variations are endless. No one line does all these things, and all lines do some of them. There are terminal roads, coal roads, commuters' roads, through freight roads, each type facing entirely dissimilar problems, each type necessary to a complex civilization.

Through consolidation of the weaker lines with the stronger, of terminal roads with coal roads, through merging two roads which wastefully compete in a territory barely able to support one, there is created a system which can efficiently perform unprofitable services and make its prosperous services pay the bills. Insofar as any single consolidation actually will accomplish this, actually will improve the average of the railroads' *service to the public*, the project is on solid ground. Apart from service, there resides no inherent merit in joining a weak road to a strong system. An ill-planned road will continue to be an ill-planned road, whether or not it is attached to a well-planned road. While the Jersey Central, serving a continuous urban and industrial area, earns about 8% on its investment, the Chicago & Alton is in receivership. Linking both to the Baltimore & Ohio will not greatly alter

the essential economics of the two lines, although it may level the returns to their stockholders. And anti-consolidationists hold this leveling process an injury to the wise stockholders who chose to invest in the well-planned, prosperous line. Only upon proof that railroad *service* will be bettered, can a consolidation program overcome the difficulties raised by unequal planning, unequal traffic, and unequal management.

This fundamental idea is not new, nor is consolidation a new problem of railroading. Both the Pennsylvania and the New York Central in the East and the Santa Fe and the Union Pacific in the West are the product of consolidations. Into the Pennsylvania went 600 roads, into the New York Central, 400. When these systems were created, in response to the need for an outlet here, a tapping line there, consolidation was easier than it is now. Cornelius Vanderbilt had only to write a check, and he had bought a railroad. The Van Sweringens, attempting to do exactly the same thing, find themselves caught in an intricate and baffling maze of public demands and prohibitions.

Economy.—Most merger applications make much of the economies to be gained by the creation of a larger unit. In such a famous application as that of the Great Northern–Northern Pacific, the argument was used with considerable effect. The two roads estimated an annual saving of about $10,000,000, divided thus:

Rerouting	$1,536,000
Terminals	3,087,000
Fuel	2,282,000
Shops	536,000
Accounting	669,000
Purchasing and stores	1,063,000
Maintenance of way	149,000
Traffic	817,000
TOTAL	$10,139,000

This is not free from the possibility of controversy. It can be argued that a large part of these economies could be gained without consolidation. And it has not yet been shown that the facts will bear out the promise. When the British Amalgamation Act (1921) joined the railroads of England into four systems, Sir Eric Geddes forecast economies of from $100,000,000 to $125,000,000 per annum. These have been realized only fractionally. While the late Senator Cummins in 1926 declared United States consolidation savings might reach the staggering total of $300,000,000 a year, he was figuring, necessarily, without any real knowledge of what new expenses might arise to offset the promised cuts.

This economy argument is new; it was barely mentioned when Congress debated the Transportation Act in 1920. Economies of one kind or another undoubtedly will follow intelligent consolidation. But they are more likely to be economies in future construction than economies in present operation.

Competition.—More vital considerations are those which make up, roughly, the public interest as distinct from the interests of the railroads and their stockholders. The preservation of competition is one, and the maintenance of "existing routes and channels of trade" is another. Here the differences between East and West must play a large part in the problem. It is highly desirable, for example, that a large traffic center, such as Kansas City, should not be served by one railroad; on the other hand it would be ridiculous to have several systems tapping the same thinly settled districts of the West. Here again the application of the Northerns furnished a case in point. Each road is the other's chief competitor, and at first glance competition might not seem to be notably preserved by their union. But they were able to show that of the six major western roads, three paralleled each other across the narrow 500-mile belt of the Northwest, battling for the same Oregon shingles, Washington apples and salmon, Minnesota wheat, and Montana copper. Thus in comparison with the central and southern lines, they made a poor showing:

Railroad	*1928 Total Operating Revenue*	*1928 Net Operating Income*	*Percentage of Return*
Southern Pacific	$300,000,000	$54,900,000	5.627
Santa Fe	247,000,000	55,300,000	6.506
Union Pacific	215,000,000	43,800,000	6.435
*	*	*	*
Milwaukee	170,000,000	29,100,000	4.333
Great Northern	126,000,000	31,200,000	6.037
Northern Pacific	101,000,000	25,000,000	5.056

Valuations taken from consolidation application of the Northerns.

By consolidation, the Northerns argued that they would do no more than give the Northwest a system equal in strength to those farther south. While the Milwaukee might charge that the merger would cut into the traffic of its western extension, the Northerns could reply that the Milwaukee should never have built such an extension and that consolidation would in fact create more competition (between regions), instead of less. The "preservation of competition" is a phrase hard to interpret, varied in its applications. In each case it must be weighed anew as an argument for or against consolidation.

Existing Routes and Channels of Trade.—If the Burlington should be divorced from the Great Northern and the Northern Pacific, existing channels of trade would be partially disrupted. In 1926, the Burlington interchanged 101,612 carloads with the Great Northern and 85,972 carloads with the Northern Pacific. Shippers have become accustomed to reach their markets in this way, and the railroads depend upon this interchange. In most cases, consolidation strengthens such trade routes and is welcomed by shippers.

Local Interests and Minority Stockholders.—From October, 1927, to March, 1928, the I. C. C. held hearings on the Northern merger. To the hearings came an impressive pair of railroad lawyers to put forward the case for the applicants: Frank Lyon Polk for the Northern Pacific and Walker D. Hines for the Great Northern. And to the hearings came also the eminent Fred H. Wood, retained by the Milwaukee to lead the opposition. Mr. Wood's client was known as an "intervener" in the case. Besides the Milwaukee many another intervener came to the hearings. St. Paul, Fargo, Duluth, and Tacoma protested against it, as did the Railroad Commissions Wisconsin and Iowa. Most of the objections were that competition would be injured or local pay rolls diminished. Since only the Northwest was involved in the merger, the intervening interests were more localized than in many cases.

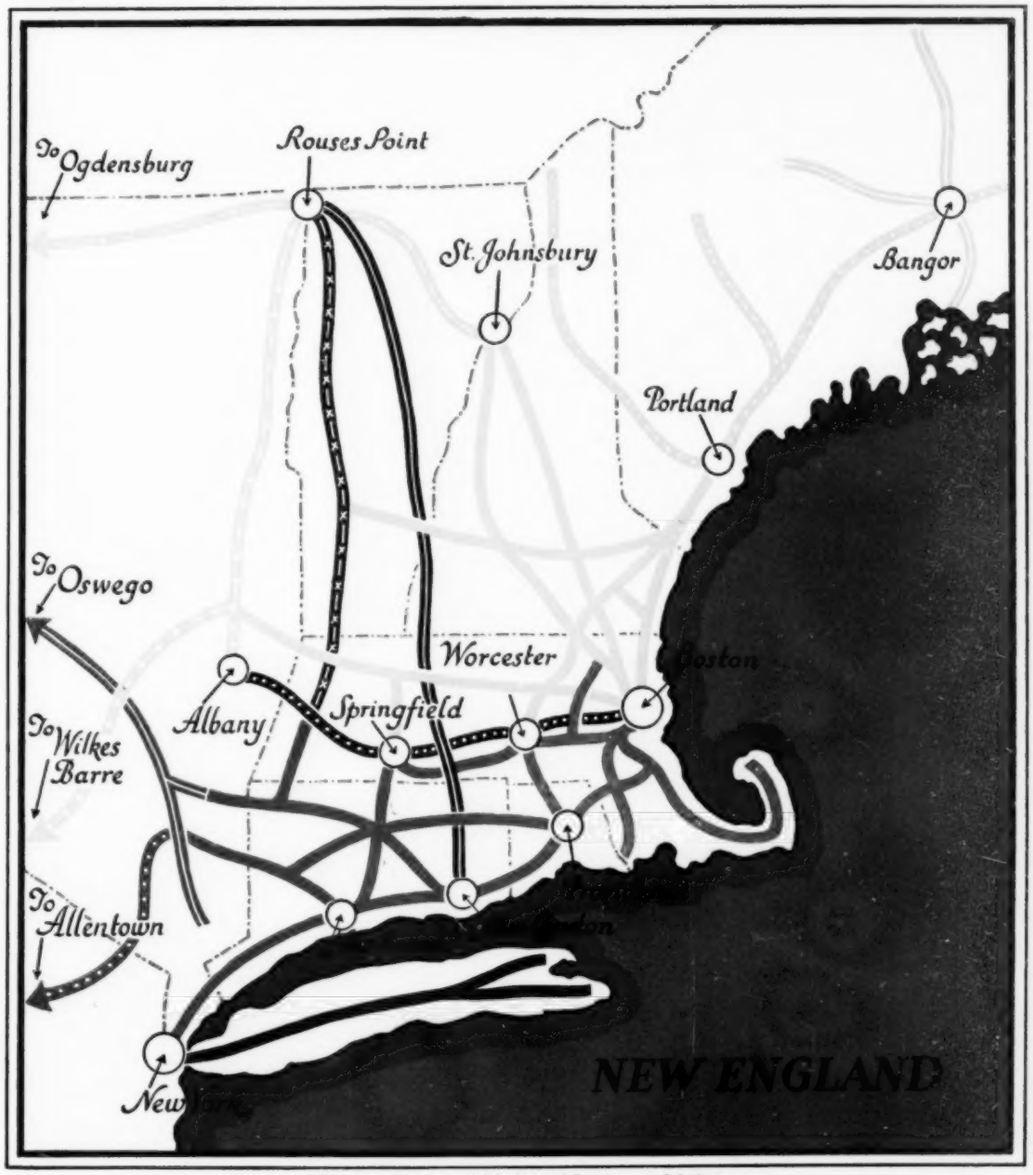
Local interveners may be for or against the merger, but there is never any doubt about the attitude of minority stockholders who intervene. They are the bane of every consolidator, the cross he must bear. In the Northern merger the only minority stockholder to intervene was Clara Hill Lindley, the daughter of J. J. Hill himself. Perhaps largely on sentimental grounds, she objected to the incorporation in Delaware of an entirely new company to take over the two Northerns. Except for this comparatively minor objection, the stockholders of both railroads seemed content with the arrangements. That the companies were of about the same financial strength

[*Continued on page 112*]

THE RAILROADS OF THE UNITED STATES

A portfolio of maps, outlining the principal carriers and showing their grouping under the Final Plan of the Interstate Commerce Commission.

THE Interstate Commerce Commission sees the country as composed not of forty-eight states but of four railroad empires: the West, the South, New England, and Trunk Line Territory. These are not water-tight compartments, as is demonstrated by roads like the Wabash, which penetrates beyond Trunk Line Territory into the West, and the Illinois Central, with tracks in both trunk line and southern territory. But the great part of every railroad's business is done in one and only one of these four great regions. Subordinate to these railroad empires are certain petty kingdoms: the West includes both the northwestern ("Granger") and southwestern territories, and Trunk Line Territory has its subordinate Pocahontas Region centering around Chesapeake Bay. The railroads in these lesser kingdoms are destined to go to one or another of the roads in the greater empires rather than to form their own local systems. Thus the four main empires can be taken as the geographical bases of consolidation. Each of them has its industries and trade centers, its individual traffic needs, and its railroads to take care of these needs. These cities, industries, and railroads already existing must determine the nature of future railroad combinations. A charting in words, lines, and colors of the four rail empires shows the material out of which their consolidations will be built.



(These maps have been slightly distorted for purposes of clarity.)

Boston & Maine
- *Boston & Maine*
- *Delaware & Hudson*
- *Bangor & Aroostook*
- *Maine Central*
- *St. Johnsbury & Lake Champlain*
- *Rutland (in part)*

New Haven
- *New York, New Haven & Hartford*
- *New York, Ontario & Western*
- *Lehigh & New England*

Assigned to Outside Systems:
- *Boston & Albany (New York Central)*
- *Rutland (in part) (New York Central)*
- *Central Vermont (Canadian National)*
- *Long Island (Pennsylvania)*

I.—NEW ENGLAND: A TERMINAL EMPIRE

Way down East, shut away behind Lake Champlain and the Hudson River from the rest of the country, are the six New England states. In density of population, two of them are above the average, and three, Rhode Island, Massachusetts, and Connecticut, rank first, second, and fourth respectively. This tiny, thickly settled corner of the United States has not the typical American alternation of broad cornlands and great cities. The farms are small, hilly, strewn with rocks, and Boston is the only New England city among the twenty-five largest American cities. The population is scattered thickly over the region in large towns and small cities: Worcester, Bridgeport, Fall River, Providence, New Haven, Hartford—the list is endless. Hardly a New England town that has not its own industry. Massachusetts has cotton mills in Fall River and Lowell, tool shops in Worcester, shoe factories in Lynn, paper mills in Holyoke, and fisheries in Gloucester. Connecticut has hat factories in Danbury, bicycle shops in Hartford, copper and brass foundries all through the Naugatuck Valley. And there are the woolen mills of Providence, R. I., the cotton mills of Manchester, N. H., the granite quarries of Barre, Vt., and the fisheries of Portland, Maine.

From a railroading viewpoint, industrial New England is one great city spreading over Connecticut, Massachusetts, Rhode Island, and the southern part of New Hampshire. The two

dominant New England railroads, the Boston & Maine and the New York, New Haven & Hartford, are primarily terminal roads. Their function is on the one hand to receive freight from the trunk lines and to distribute it throughout the thickly populated territory they serve; on the other hand, to carry the manufactured goods of New England to the seaboard or to the trunk lines. The Boston & Maine spreads out from Boston in a general northwesterly direction through northern Massachusetts and southern New Hampshire. The New Haven spreads out from Boston southwesterly through southern Massachusetts, Rhode Island, and Connecticut. They are complementary rather than competitive since they operate in distinct terminal zones. The Boston & Albany lies in between the two. The other New England roads, the Maine Central, Bangor & Aroostook, Rutland, Central Vermont, etc., are rural roads serving less populous territory. They are important largely as connections between southern New England and Canada. There are two possible groupings of the New England roads: one is to assign them to various trunk lines, thus extending trunk line competition into New England; and the other is to form one or more New England consolidations. Even if all the roads were grouped in one system, it would have only 7,000 miles of track. Since the New England roads have now recovered their prosperity, such a consolidation would be financially sound.

The Commission's Plan agrees with local public opinion that regional consolidations would best serve New England. Two roads of importance, the Boston & Albany and the Central Vermont, have long been controlled by the New York Central and the Canadian National respectively. The Commission leaves these roads to their present holders, and groups all the rest around either the Boston & Maine or the New Haven. To both systems are added extensions into the Pennsylvania coal fields. There is only one merger project now before the I. C. C. that affects New England. This is the Loree Belt Line Project, which groups most of the New England roads with various roads in Trunk Line Territory to form a large Atlantic seaboard terminal system. The Final Plan not only disregards this completely, but also assigns Mr. Loree's own Delaware & Hudson to the Boston & Maine.

II.—THE TRUNK LINES

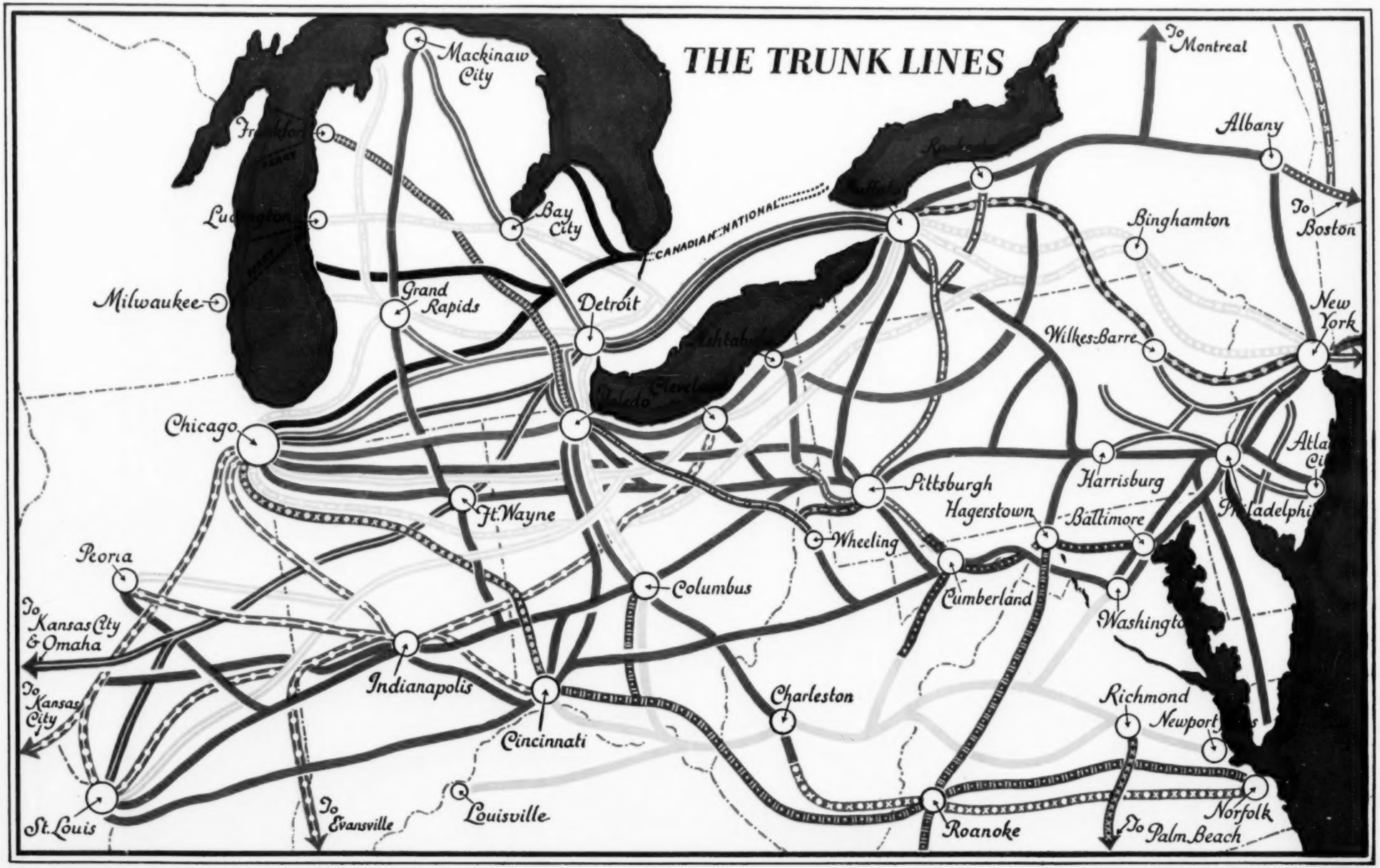
A tremendous urban and industrial development makes Trunk Line Territory the crucial field in any national consolidation plan. Of the twenty-five largest American cities, fifteen (among them the six largest) are in Trunk Line Territory. Along the Atlantic seaboard are strung Washington, Baltimore, Philadelphia, and New York. Farther inland are Buffalo and Pittsburgh, gateways to an industrial region that includes Cleveland, Columbus, Cincinnati, Indianapolis, Toledo, and Detroit. For its western gateways the territory has Chicago and St. Louis. In this empire the machine is king. From New York and Pennsylvania, the two leading manufacturing states, through Ohio, Indiana, southern Michigan, and Illinois, it is an area of industry. Here, in the mountains of Pennsylvania and West Virginia, is found the coal which feeds the machine. And here too is produced, by United States Steel and Bethlehem in Pennsylvania and by the newly formed Republic Steel in the Middle West, most of the basic machine material, steel. The trunk lines not only link up all these cities and industrial areas, but they also exchange the manufactures of the East for the food and raw material of the West. Nowhere in the country are transportation problems more complex than here. Nowhere is railroad competition more intense.

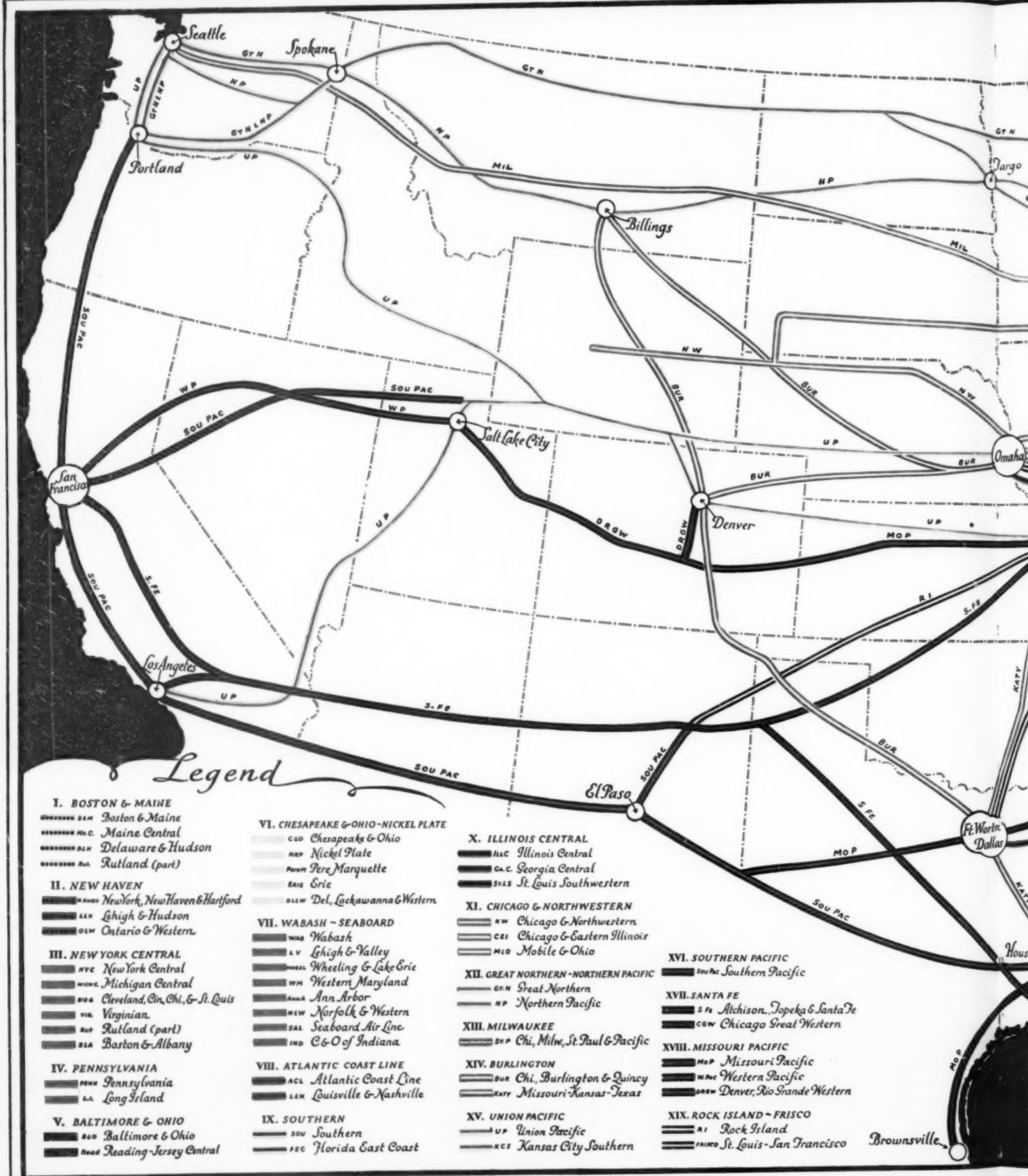
Coal.—One thing that makes competition especially intense is the fact that Trunk Line Territory contains most of the country's coal, a commodity that is important to industry and vital to the railroads themselves. Good coal property on its lines is a major source of strength for many a railroad. As every housewife knows, there are two kinds of coal: hard (anthracite) and soft (bituminous). Practically all anthracite coal in the country comes from an area of 480 square miles in northeastern Pennsylvania. To carry this coal from its tiny producing area to tidewater, whence it can be distributed by water over the length and breadth of the land, there has come into existence a group of highly specialized railroads known as the "hard coal roads." These are preëminently the Lehigh Valley, the Lackawanna, the D. & H. and the Reading–Jersey Central system. Taking the coal from northeastern Pennsylvania, these carry it to tidewater at Buffalo on the Great Lakes, at New York and Philadelphia, or at Montreal on the St. Lawrence. Their vital dependence on coal is revealed by the fact that in 1928 "products of mines," which means almost entirely hard coal, made up 56 per cent of Lackawanna traffic, 54 per cent of Lehigh, 63 per cent of Reading, and 65 per cent of D. & H. However, these roads are important in trunk line mergers, not so much for their coal as for their strategic positions. The Baltimore & Ohio badly needs the Reading to give it an entrance into New York, and any one of the other four trunk lines could use either the Lehigh or the Lackawanna as a valuable line from Buffalo to New York. Another reason why consolidators are looking more to the geography than to the coal traffic of these roads is that anthracite coal is steadily diminishing in importance in comparison with bituminous. In 1908 anthracite production was 76,400,000 long tons, bituminous 352,400,000 long tons; twenty years later anthracite was 68,512,000 long tons, bituminous 439,900,000 long tons.

The soft coal supply of the country, though less localized than the hard, largely depends on the deposits of the Pocahontas Region in the southern part of West Virginia. Three railroads serve this region: the Chesapeake & Ohio, the Norfolk & Western, and the Virginian. They stretch from the coal fields to tidewater at the entrance to Chesapeake Bay. Since they serve a less industrialized and populous area than do the hard coal roads, the traffic of the Pocahontas roads runs even more to coal: 86 per cent of the C. & O. total, 83 per cent of the Norfolk & Western, and 94 per cent of the Virginian. On account of their heavy tonnage and low operating expenses, these roads are extremely prosperous. No part of the Pennsylvania system is more profitable than the Norfolk & Western; and the Virginian, with the remarkably low operating ratio of 54.67, as compared to the 72.62 of even so prosperous a line as the Jersey Central, is coveted by more than one consolidator. Two of the Pocahontas roads approach trunk line extent: the Norfolk & Western, which reaches Columbus and Cincinnati, and even nearer, the C. & O., which reaches Chicago over its subsidiary, C. & O. of Indiana. The C. & O., indeed, is made the base of the Van Sweringen trunk line consolidation. Roughly paralleling each other, the three soft coal roads are active competitors in one of the richest railroad districts of the country. And to control these desirable properties are competing, in turn, the trunk lines.

Tactics.—Competition breeds conflict. For nine years the main theatre of consolidation warfare has been Trunk Line Territory. The struggle has been dominated by the four trunk line powers: the Pennsylvania, the New York Central, the B. & O., and the Van Sweringen roads (C. & O., Erie, Nickel Plate, Pere Marquette). At various times lesser powers, notably the Brothers Taplin, Leonor F. Loree, and the Wabash, have played aggressive parts in the warfare, but only the Wabash has much prospect of success. Of the four prime movers in trunk line consolidation, two play one kind of game, two another. The B. & O. and the Van Sweringens, having an urgent need of certain roads to complete their systems, have long been active and constructive in their consolidation moves. They both have merger proposals now pending before the Commission. On the other hand, the Pennsylvania and the New York Central, whose systems are large, completed, and well-integrated, have been playing a defensive, negative game. They have no proposals before the Commission. The naturally allied B. & O. and the Van Sweringens know the New York Central as their good, if somewhat passive, friend, the Pennsylvania as their most determined enemy. The boldness of such Pennsylvania moves as the wresting of the Pittsburgh & West Virginia from the Van Sweringens and of the Detroit, Toledo & Ironton from the B. & O. have made the Pennsylvania a potent destructive force in consolidation.

The eastern merger situation represents, broadly, the attempt of certain trunk lines to supplement themselves with regional roads. The two great trunk systems, the Pennsylvania and the New York Central, are already securely entrenched. They have their north-and-south extensions tapping the territory on either


THE TRUNK LINES
Mackinaw City
To Montreal
Albany
Bay City
CANADIAN NATIONAL
Binghamton
To Boston
Milwaukee
Grand Rapids
Detroit
New York
Wilkes-Barre
Chicago
Pittsburgh
Harrisburg
Ft. Wayne
Hagerstown
Baltimore
Wheeling
Peoria
Columbus
Cumberland
To Kansas City & Omaha
Indianapolis
Charleston
Richmond
To Kansas City
Cincinnati
Newport
Louisville
Norfolk
St. Louis
To Evansville
Roanoke
To Palm Beach
New York Central
New York Central
Boston & Albany
Rutland (in part)
Michigan Central
Big Four
Pittsburgh & Lake Erie
Virginian
Pennsylvania
Pennsylvania
Long Island
Baltimore & Ohio
Baltimore & Ohio
Reading–Jersey Central
Chicago & Alton
Buffalo, Rochester & Pittsburgh
Wabash–Seaboard
Wabash
Seaboard
Lehigh Valley
Wheeling & Lake Erie
Pittsburgh & West Virginia
Western Maryland
Ann Arbor
Norfolk & Western
Chesapeake & Ohio of Indiana
Chesapeake & Ohio–Nickel Plate
Chesapeake & Ohio
Nickel Plate
Hocking Valley
Pere Marquette
Erie
Delaware, Lackawanna & Western
Assigned to Outside System:
Grand Trunk (Canadian National)


Seattle
Spokane
Portland
Billings
Fargo
Salt Lake City
San Francisco
Los Angeles
Denver
Omaha
El Paso
Ft. Worth Dallas
Brownsville
GT N
NP
MIL
UP
GT N LNP
SOU PAC
WP
NW
BUR
D&RGW
MOP
S. FE
RI
KATY
Legend
I. BOSTON & MAINE
BAM Boston & Maine
ME.C. Maine Central
D&H Delaware & Hudson
Rut. Rutland (part)
II. NEW HAVEN
N.H.&H. New York, New Haven & Hartford
LEH Lehigh & Hudson
O&W Ontario & Western
III. NEW YORK CENTRAL
NYC New York Central
MICH.C. Michigan Central
C.C.C.&St.L. Cleveland, Cin., Chi., & St. Louis
VIA. Virginian
RUT Rutland (part)
B&A Boston & Albany
IV. PENNSYLVANIA
PENN Pennsylvania
L.I. Long Island
V. BALTIMORE & OHIO
B&O Baltimore & Ohio
R.&J. Reading-Jersey Central
VI. CHESAPEAKE & OHIO-NICKEL PLATE
C&O Chesapeake & Ohio
NKP Nickel Plate
PERE M. Pere Marquette
ERIE Erie
D.L.&W. Del., Lackawanna & Western
VII. WABASH - SEABOARD
WAB Wabash
L.V. Lehigh & Valley
W.&L.E. Wheeling & Lake Erie
W.M. Western Maryland
A.A. Ann Arbor
N.&W. Norfolk & Western
SAL Seaboard Air Line
C&O of IND. C & O of Indiana
VIII. ATLANTIC COAST LINE
ACL Atlantic Coast Line
L.&N. Louisville & Nashville
IX. SOUTHERN
SOU Southern
FEC Florida East Coast
X. ILLINOIS CENTRAL
I.C. Illinois Central
G.A.C. Georgia Central
STL&S.W. St. Louis Southwestern
XI. CHICAGO & NORTHWESTERN
NW Chicago & Northwestern
C.&E.I. Chicago & Eastern Illinois
M.&O. Mobile & Ohio
XII. GREAT NORTHERN - NORTHERN PACIFIC
GT.N. Great Northern
N.P. Northern Pacific
XIII. MILWAUKEE
C.M.St.P. Chi., Milw., St. Paul & Pacific
XIV. BURLINGTON
BUR Chi., Burlington & Quincy
MKT Missouri-Kansas-Texas
XV. UNION PACIFIC
UP Union Pacific
K.C.S. Kansas City Southern
XVI. SOUTHERN PACIFIC
SOU PAC Southern Pacific
XVII. SANTA FE
S.Fe Atchison, Topeka & Santa Fe
C.G.W. Chicago Great Western
XVIII. MISSOURI PACIFIC
MOP Missouri Pacific
W.Pac. Western Pacific
D.R.G.W. Denver, Rio Grande Western
XIX. ROCK ISLAND - FRISCO
R.I. Rock Island
FRISCO St. Louis - San Francisco

THE NINETEEN SYSTEMS

XUM

side of their main lines. They have their extensions into important producing areas and their integrating links between the various parts of their systems. Neither has asked the I. C. C. for any important roads, nor (except for the Virginian to the New York Central) was either awarded any in the Final Plan. The two major powers in Trunk Line Territory have little need for additional roads.

I. C. C. allocations.—The three interests that are active and potent in consolidation are the B. & O., the Wabash, and the Van Sweringen group. Between them they desire—and the I. C. C. Final Plan recognizes that their desire is prompted by necessity—every independent line of importance in the territory. Their needs are great and, at times, conflicting. They are based on certain considerations of traffic and geography. As a trunk lines system, the B. & O. has two main weaknesses: it has few extensions to the north, and it has no access over its own tracks to New York. To remedy the first, it asked the Commission for the Wabash, the D. T. & I., and the Buffalo, Rochester & Pittsburgh. The Final Plan grants it the B. R. & P., a half interest in the D. T. & I., and the bankrupt Chicago & Alton. Though this last road, on account of its bad financial condition, does not appeal to the B. & O., it well serves its geographic purpose in the system, tying together the western extremities of the B. & O. with a line from Chicago down to St. Louis and Kansas City. Those good friends and allies of the B. & O., the Van Sweringens, are in a different position as to their merger plans because most of the roads they would merge they already control. The main stems of their system, the Erie, C. & O., Nickel Plate, and Pere Marquette, have been in their group for some time. Last spring the Van Sweringens asked the Commission for certain additions, chiefly the Wheeling & Lake Erie (as a line from the Pittsburgh industrial area northwest to Toledo and the Great Lakes), the Chicago & Eastern Illinois (which, like the Chicago & Alton, would tie together the western extremities of their system), the Virginian (to supplement their C. & O.), and the Lackawanna (to supplement the Erie, at present their sole and inadequate entrance into New York). The Final Plan groups together the roads now under Van Sweringen control (taking away from the C. & O., however, its line into Chicago: the C. & O. of Indiana), and adds to them only the Lackawanna.

The fifth and most recent trunk line power, the Wabash, is more than satisfied by the provisions of the Final Plan. Whereas the B. & O. and the Van Sweringens have been in the field almost since the Transportation Act was passed in 1920, the Wabash did not place its consolidation proposal before the Commission until last July. Its brief outlined a system that would start from New York and run to Buffalo (Lehigh), go from Buffalo to Detroit along the Canadian side of Lake Erie (Wabash), from Detroit into Chicago (Wabash), and up into northern Michigan (Ann Arbor). This would be the rambling northern part of the far-flung system. The more southerly line would stretch from Omaha and Kansas City via Springfield, Ill., to Toledo (Wabash), and from there wend its way to the Atlantic seaboard at Baltimore (Wheeling & Lake Erie, Pittsburgh & West Virginia, Western Maryland). The remarkable feature of this system was its territorial range. Omaha and Kansas City are points well in western territory that are reached by no trunk line save the Wabash.

The Final Plan proceeds to render the Wabash an even more amazingly rambling system by granting it all the roads its petition asked for and by adding to them the C. & O. of Indiana, reaching from Chicago to Cincinnati, the Norfolk & Western, which carries the system down through the Virginias, and the Seaboard Air Line, which takes it all the way to Florida. The weak financial condition of the last of these additions is somewhat balanced by the great prosperity of the Norfolk & Western. In geographical range the Wabash–Seaboard system is formidable, but somewhat less so in the condition of its properties. The Seaboard is in bad financial shape, the Wheeling–Western Maryland route is physically not up to the trunk line standard, and the Wabash itself is single-track for much of its rambling extent and must depend on trackage rights over the Grand Trunk from Detroit to Buffalo. Though the idea of setting up the Wabash as the basis of a fifth trunk system is not new, L. F. Loree having striven mightily but in vain to join the Lehigh to the Wabash in 1926, Chairman Williams and the I. C. C. between them have carried the idea to undreamed of conclusions. When the Wabash put forth its plan last spring, the knowing ones saw in it little more than a strategical sally by the Pennsylvania, which did and does control 48 per cent of Wabash common stock. But now shrewd Chairman Williams has the satisfaction of seeing his system started on the way toward realization. From "Williams' Folly" the Wabash system has become unquestionably the Plan of the Moment.

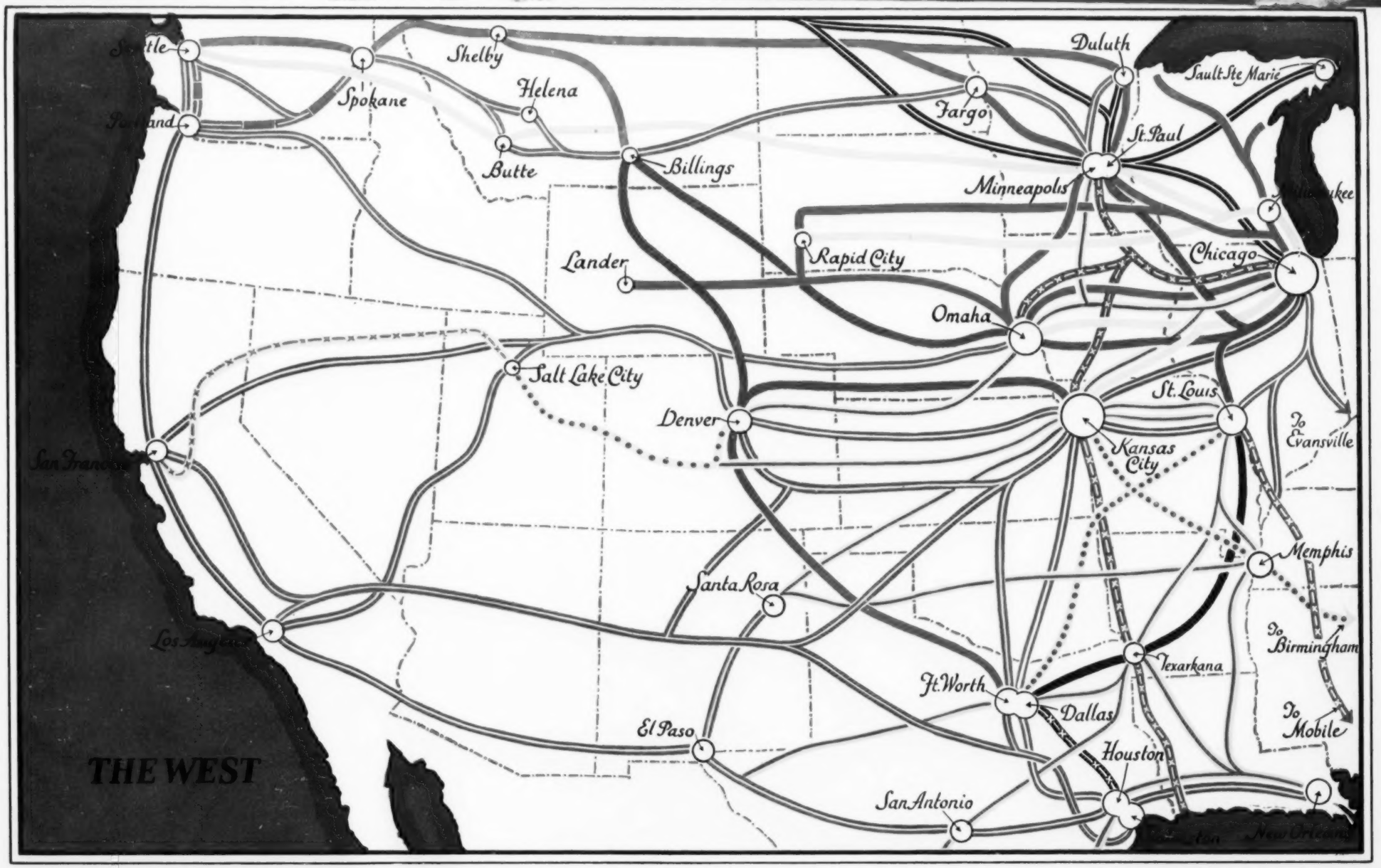
III.—THE WEST

The West is the producer for the nation. From its broad lands come raw materials for eastern mills and factories, food for eastern cities. Its traffic centers are some of them in the Middle West: Chicago, St. Louis, New Orleans, Dallas, Fort Worth, Houston, Galveston, Omaha, Kansas City, St. Paul, and Minneapolis. Denver and Salt Lake City are the only nuclei of traffic in the great central region. On the Pacific coast are Portland, Seattle, San Francisco, and Los Angeles. Between these centers is a vast area whose varied and abundant products may be roughly suggested: timber from Oregon and Washington; oil from California, Texas, and Oklahoma; live stock from Iowa, Texas, Missouri, and Nebraska; copper from Arizona and Montana; iron ore from Minnesota; fruit from California and Oregon; cotton from Texas; and tons of grain from Kansas, Iowa, Nebraska, Minnesota, and the Dakotas. Since the interior of the West is blank of large cities, the railroads must haul these products to the traffic centers on the boundaries of the empire. To cover the long distances of the West, its railroads stretch out their tracks instead of bunching them together in terminals and triple-track lines as do the eastern roads. Thus the B. & O. and the Rock Island have each about 11,000 miles of track, but the B. & O. has only 5,600 miles of line compared to the 7,500 of the Rock Island. There is an even greater difference in property investment: $1,006,000,000 of the B. & O. to $463,000,000 of the Rock Island.

Of the many and lengthy western railroads, the lengthiest are, of course, the six western trunk lines: Southern Pacific, Santa Fe, Union Pacific, Milwaukee, Northern Pacific, and Great Northern. With six parallel bands of steel, they span the breadth of the West from the Mississippi Valley to the Pacific coast. The other important roads radiate out from one or more of the three chief middle western traffic centers: Chicago, Kansas City, and St. Louis. They have two general purposes: to bring into these centers the products of the rich farm lands surrounding them (as the Chicago & North Western and such "Granger" roads), or to connect Kansas City and St. Louis with the Gulf (as the Missouri-Kansas-Texas and such southwestern roads).

Few of the powerful western systems have any urgent need of additions, and there has been little consolidation activity. The only western merger project now before the I. C. C. is that of the Great Northern and Northern Pacific, 61 per cent whose stock is held by the same interests. Thus in carving up the empire of the West, the Commission had more or less of a clear field, unhampered by the rivalries of Trunk Line Territory. Its Final Plan outlines nine systems. Two of them, the Milwaukee and the Southern Pacific, remain about as they now exist. The Rock Island–Frisco system is the union of complementary roads with a strong community of stock interest, as is also the uniting of the two Northerns. In the case of each of the five remaining groups, the Commission has extended a large system into new territory by adding to it one or more smaller roads, some of which were wanted, and some of which were not. The Santa Fe reaches up into the northwest by means of the Chicago Great Western, the Union Pacific down to the Gulf over the Kansas City Southern. The Katy takes the Burlington from Kansas City down to the Gulf, and the Missouri Pacific reaches San Francisco and becomes the seventh transcontinental by means of the Denver & Rio Grande Western plus the Western Pacific. Most spectacular of all is the southern extension of the Chicago & North Western: the Chicago & Eastern Illinois takes it to St. Louis, whence the Mobile & Ohio carries it down to the Gulf of Mexico.

XUM



Chicago & North Western
- Chicago & North Western
- Chicago & Eastern Illinois
- Mobile & Ohio

Great Northern–Northern Pacific
- Great Northern
- Northern Pacific

Milwaukee
- Chicago, Milwaukee, St. Paul & Pacific

Burlington
- Chicago, Burlington & Quincy
- Missouri-Kansas-Texas
- Trinity & Brazos Valley (½)

Union Pacific
- Union Pacific
- Kansas City Southern

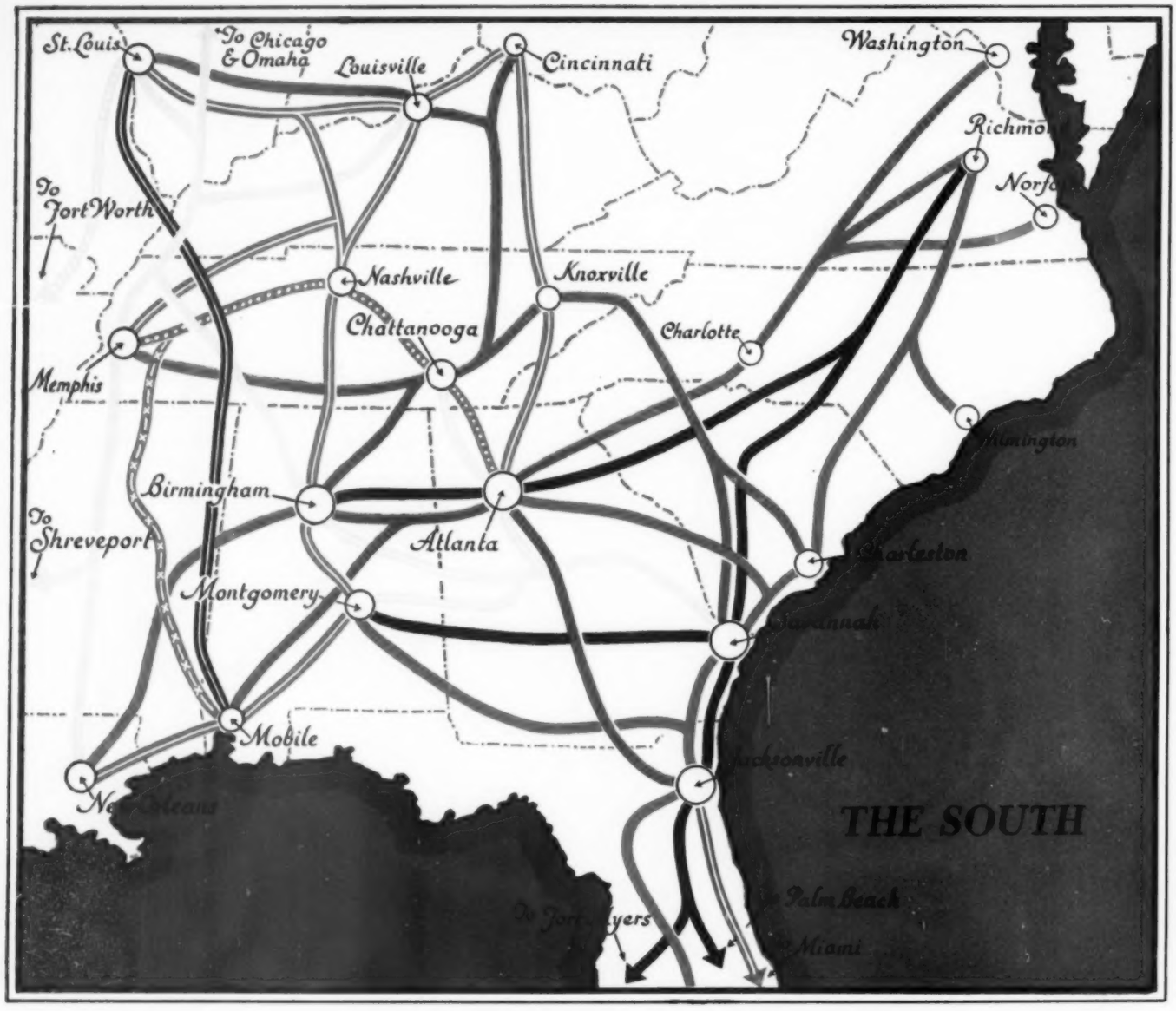
Southern Pacific
- Southern Pacific

Santa Fe
- Santa Fe
- Chicago Great Western

Missouri Pacific
- Missouri Pacific
- Western Pacific
- Denver & Rio Grande Western

Rock Island–Frisco
- Chicago, Rock Island & Pacific
- St. Louis-San Francisco
- Trinity & Brazos Valley (½)

Assigned to Outside Systems:
- St. Louis Southwestern (Illinois Central)
- Soo Line (Canadian Pacific)



Atlantic Coast Line
- Atlantic Coast Line
- Louisville & Nashville
- Nashville, Chattanooga & St. Louis
- Gulf, Mobile & Northern

Southern
- Southern
- Florida East Coast

Illinois Central
- Illinois Central
- Central of Georgia
- St. Louis Southwestern

Assigned to Outside System:
- Seaboard Air Line (Wabash–Seaboard)
- Mobile & Ohio (Chicago & North Western)

IV.—THE SOUTH

On one side the South is bordered by the Atlantic Ocean, on one side by the Gulf of Mexico, on one side by the Mississippi River, and on the fourth by the Ohio River. Like the West, it is primarily a producing region: Florida grows oranges; Birmingham digs coal and iron; Mississippi fells timber; and the entire South raises cotton, potatoes, tobacco, corn, and hogs. The railroads haul these products to the nearest watery boundary, and haul back into the interior (from the North and West at least) automobiles, shoes, and other manufactures. Thus most of the traffic centers are points on the edge of the region, as Charleston and Jacksonville on the Atlantic, Mobile and New Orleans on the Gulf, and Memphis on the Mississippi. In the interior are the two great centers of Birmingham and Atlanta, from each of which radiates a fan of railroads. Since most southern produce is either shipped from Gulf ports or exchanged, via such northern gateways as Louisville and Cincinnati, for the manufactures of the northern states, the railroads take a general north-and-south direction.

None of the other rail empires has as little to gain or lose by consolidation as the South. Of the 40,000 miles of railroads in the South, 36,000 are already controlled by four systems: the Southern, the Seaboard Air Line, the Atlantic Coast–Louisville & Nashville, and the Illinois Central. And, with one exception, these systems are fairly equal in size and earning power. The one and only major problem in southern consolidation is the disposition of the Seaboard. The Ripley Plan grouped it with the Norfolk & Western into an independent system; the 1922 I. C. C. Tentative Plan assigned it to the Illinois Central (which vigorously protested); and now the Final Plan awards it to the equally reluctant Wabash. Except for this allocation of the Seaboard, the Final Plan leaves the railway map of the South essentially unchanged.

Diamond v. Emerald, Ruby & Sapphire

A comparison of the seven cardinal virtues of four precious stones, showing why the colored gems are more exciting to pursue and to possess.

A FAMILIAR figure to those who frequented the gilded corridors of the Waldorf-Astoria Hotel in New York toward the close of the last century was that of "Diamond Jim" Brady, whose fortune in speculation and railroad supplies had flourished like a fungus, and who expressed his wealth by illuminating his fatness with diamonds. Mr. Brady wore diamonds in his teeth and on his braces. His more obvious use of them included diamond shoe buttons and a pair of jeweled spectacles for his dog. Naturally, the gems with which he embellished his underwear were not visible to the eye, but he took good care to wear many others, shaped like railroad cars, locomotives, and air brakes, so that on his more demonstrative days, the onlooker was attracted, not so much by the passage of a famous and provident New Yorker, as by a pyrotechnical hulk the like of which was not to be seen in the midlands or, indeed, anywhere except in the vicinity of Mr. Brady's extraordinary person.

He was an impressive figure; any man who bears with him such patent symbols of worldly success is bound to excite the respect and awe of his fellows who are less fortunate. He was something to be remembered in New York, like the extravaganzas of the Hippodrome, the crush of barouches on Fifth Avenue, and the hordes of sightly ladies who promenaded of a Sunday afternoon on the same boulevard. There must, however, have been reflective spectators of this American phenomenon who regarded it as more than a little akin to the tinselly blare of the Hippodrome shows. What, this philosophical few must have asked themselves, is "Diamond Jim" Brady's purpose? What effect or personal satisfaction does he hope to achieve by his encrustation of jewels?

A variety of answers would immediately have suggested themselves. Perhaps, simply enough, Mr. Brady was as fond of the flash of diamonds as he was of food. He it was who once remarked of the thick creamy sauce on a filet of sole Marguery: "That's so good that I could eat it on a Turkish towel." Perhaps the fact that Mr. Brady wore a respectable fortune in gems enhanced his feeling of solidarity, of prosperity. Perhaps he thus established himself as an individual, advertised himself as the arch-salesman that he was. But whether his garnishing was for self-satisfaction or from a wish to impress others, one fact is quite apparent—the diamond was the only jewel which would have fully accomplished his aim.

For it seems manifest that the quality Mr. Brady most ardently sought was the quality of shine. Whether for his own benefit, or that of others, he wanted to shine. His was an assertive nature and he naturally chose the diamond, the most assertive of gems. It could not have troubled him to reflect that diamonds were the most ordinary and widely possessed of gems; the fact remained that their sparkle was matchless, their costliness was universally recognized, and there were very few people who could afford to wear them in bulk.

Mr. Brady's position, if such it was, was impregnable. The diamond *is* the gem which can be perceived at the greatest distance. The diamond *is* a supremely expensive commodity. It makes but slight difference that practically every womanly woman in the land exhibits a diamond on her ring finger, that more diamonds are sold per annum than all other precious stones put together. Diamonds in the mass, a sunburst, a tiara, are still considered by the general public a spectacle of grandeur as well as a token of high solvency, and the matron who dons them still considers herself as much a vehicle of wonder as did the Mogul emperor when he held in his hands the immense Kohinoor diamond, newly dredged from the shafts of Golconda in the Indian province of Hyderabad.

Friendly warning to dowagers

Yet it occurs to many people of discernment that the diamond is a treacherous stone. Skillfully cut, in its finest white and blue-white manifestations, it is a perfect and dazzling mineral which offers an utterly cold, inhuman radiance. To some degree it always chills the warm, human aspect of its wearer, but if the wearer is already a chilly person the diamond produces an astonishing refrigeration. For this reason, only the most vital, full-blooded persons may wear many of these gems without substantial loss of temperature. What further seems clear is the fact that the diamond's perfection of form and luster (58 mathematically computed facets compose the classic "brilliant" cut which gives the maximum sparkle) makes it an impossible ornament for people with poor profiles or dumpy bodies. An exquisite diamond may almost be heard to mock at a pudgy nose, a scrawny neck, or similar physical imperfections. Thus it would seem that diamonds had best be forbidden ornaments except for those whose features and figures are of fine design and whose blood runs briskly. That is why a puffy dowager, issuing forth with her tiara boomdeay, is so apt to appear both pitiful and absurd, and why the strange case of Mr. Brady is remembered as a travesty of taste.

The fastidious few will bear in mind their human imperfections and will take care not to emphasize them by injudicious use of such an exacting gem.

They will, on the other hand, be increasingly delighted with the colored stones (rubies, sapphires, emeralds) which, shimmering and smouldering, possess more subtle iridescences than the diamond and are not only beautiful but sympathetically and warmly suited to the human texture. Furthermore, while it would never occur to a tasteful person to wear jewels either for showiness or expense, it is quite in accord with the canons of good taste to delight in something valuable—not as regards cost, but as something rare, esoteric, difficult of attainment. And from the standpoint of value, in this sense, the lordly diamond must yield to the colored gems; its combination of intrinsic and extrinsic values is less appealing to the gem fancier than the combinations of values which may be had in the ruby or the sapphire or the emerald.

In order fully to appreciate this statement, which may be surprising to many, it is necessary to consider in detail the

Courtesy of Black Starr & Frost, Gorham, Inc.

qualities which make a stone, in the given sense, valuable, and to compare the stones in regard to these qualities. Naturally, they are the same qualities which determine prices, for that which is most prized has always been most costly. It would seem, therefore, that diamonds, which have just been called less valuable than the colored gems, should be correspondingly cheaper. Everyone knows that they are not. The explanation of this apparent paradox, which will be given as we progress, is of the utmost importance to one who would be wise in the selection of gems.

The value-determining qualities are seven: BEAUTY, COLOR, SIZE, PURITY, DURABILITY, FASHION, RARITY. Obviously the value of any individual stone depends upon a complex interaction of these qualities, and a monstrous freak opal, perfectly clear, spherical, and three feet in diameter, might conceivably be more valuable, though the opal is commonly classed as a "semiprecious" stone, than a large but conventional diamond. But because they ordinarily exhibit these seven qualities, individually and collectively, to a finer degree, four stones —diamond, sapphire, ruby, emerald—usually emerge as more valuable than the other minerals.

These form the quartet customarily called "precious" stones. The term is valid only financially (and even then is dubious, due to the fluctuations of fashion), for a study of chemical constituency and the qualities mentioned above results in complex considerations which permit no criterion by which certain stones may be called "precious" and others "semiprecious." As a matter of fact, "semiprecious" alexandrites are rarer than any of the "precious" quartet; zircon is more brilliant than any gem except the diamond; amethyst and garnet are, at various times, and quite apart from their relative cheapness, more fashionable than perhaps one or several of the "precious" four. Certain "semiprecious" stones, such as the best specimens of jade and alexandrite, may, indeed, bring prices which average quite as high as "precious" averages, although the record prices for diamonds, rubies, emeralds, and sapphires have never been topped by other stones. The late Charles Tiffany, founder of the firm which bears his name, always insisted that all ornamental minerals were "precious" stones, and last year American jewelers asked that the words "other genuine" be substituted for "semiprecious" in the Tariff Bill.

The emerald

A more detailed scrutiny of the "precious" quartet may well begin with the emerald, which is pronounced by Dr. George Frederick Kunz, veteran expert of Tiffany's, to be, when large and fine, the costliest gem in the world today. Emeralds are plentiful but relatively fragile stones—the most fragile of those under consideration. In addition they never seem to be free of infinitesimal carbon spots, and the expert who claims to have seen a flawless emerald is likened, by his fellows, to a talkative fisherman. Hence emerald collecting offers the thrill of search for stones as clear as possible.

Some enigmatical creed of taste decrees that emeralds of a lustrous dark green shall bring the high prices and those of a liquid light green shall be comparatively cheap. Perhaps this is a ramification of that *fin de siècle* reverence for things which are dark and sombre and corresponding distrust of the lighter hues in everything from painting and furniture to systems of moral-

ity. An age which lets more sunlight through its walls and admires the pastel tints of Claude Monet should speedily restore financial prestige to the light green emerald. With any observant person, these lovely stones are in no need of esthetic prestige. When Queen Victoria of Spain recently visited the International Exposition at Seville, she paused a long while before the $10,000,000 display of emeralds in the Colombia Building, thus motivating among Spaniards the most lively vogue that the emerald enjoys today.

Russia produces inferior emeralds on the Asiatic side of the Urals near Ekaterinburg, and some Austrian peasants of Bramberg once communistically operated an emerald mine which is now extinct; but high in the Andes, near Bogotá, Colombia, are the Muzo and Coscuez mines, which yield the most distinguished examples of this most distinguished member of the beryl family. A few years ago the Colombian Government characteristically began ignoring a contract with Rosenthal Frères of Paris under which they worked these mines. The Rosenthals now make a useless legal pother while Colombia doles out the gems as it wills and, of course, boosts the prices. This method of control should be remembered in connection with a case which will be discussed later where its effects are so considerable as to be appalling.

Ruby and sapphire are both corundum

Ruby and sapphire are names used to denote certain colors of the same chemical substance—corundum (alumina or aluminum oxide, Al_2O_3). A ruby is red corundum; a sapphire, blue. Other corundums are yellow (oriental topaz), green (oriental emerald), purple (oriental amethyst), and colorless (white sapphire). Burma, Siam, and Ceylon contain the great corundum beds. In Ceylon the evasive ruby is found many feet beneath the surface, under the roots of rubber plants. But the best rubies are Burmese.

The ruby is the rarest of the "precious" quartet—so rare that the diamond is comparatively ordinary. The fancier is also attracted by the fact that it may be discovered flawless and unblemished, and is of high durability. As in the case of the emerald, a color fetish animates fashionable ruby purchasers. The pigeon's blood stone—like a congealed drop of port wine—brings the highest prices, followed by a still darker shade termed ox blood. The lighter orange-red ruby (note the parallelism with the emerald) does not persuade many buyers. Quite apart from the fact that it is in particular favor with smart Americans at the present time, the ruby is a gem which, by virtue of its warm, sumptuous beauty and its rarity, delights the connoisseur as much, if not more, than any other jewel.

The ruby gives new and beautiful significance to the color red; the sapphire likewise to blue. But the sapphire has not the appeal of rarity possessed by the ruby, for though both are mined in the same regions, corundum is blue far oftener than it is red. Again the dark shades are generally preferred—the ink or cornflower blue sapphires commanding such prices as would never be asked for the delicate, light stones, however attractive these may be. But, on the other hand, because they divulged gems which were too dark (serge blue), the sapphire deposits of Australia, from which much had been expected, proved disappointing to prospectors.

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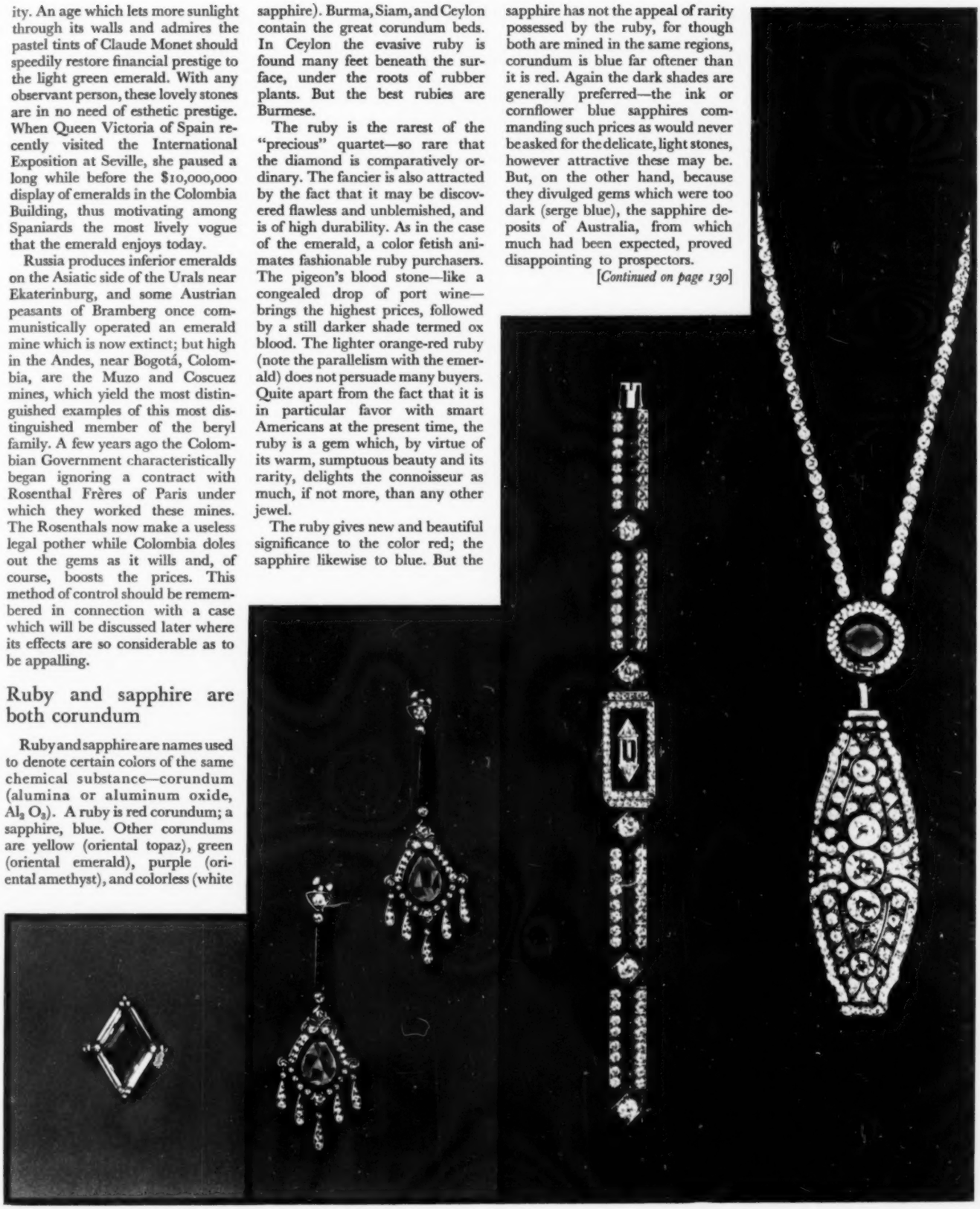


The Unseen Half of South Bend

Its Industrial Army, its Generals Bendix and Erskine. A $300,000,000 song of the shirt and of motors, brakes, fishhooks, plows, radios, sewing machines, varnish, and croquet balls.

THERE were born in the city of South Bend, Indiana, last year, some 2,083 babies. If they are by-products of love, so also are they by-products of industry. We shall seek to discover both how much and what kind of industrial productivity is required, these days, for the human reproductivity of South Bend.

To understand the life which calls forth the babies in South Bend is to understand why all the babies in all the United States are born. For South Bend is the perfect microcosm, the living example, the photographable average. As you rattle by on the *Century* two hours out from Chicago, you may, hereafter, peer through grime-flaked windows and exclaim with a connoisseur's delight: "An authentic type."

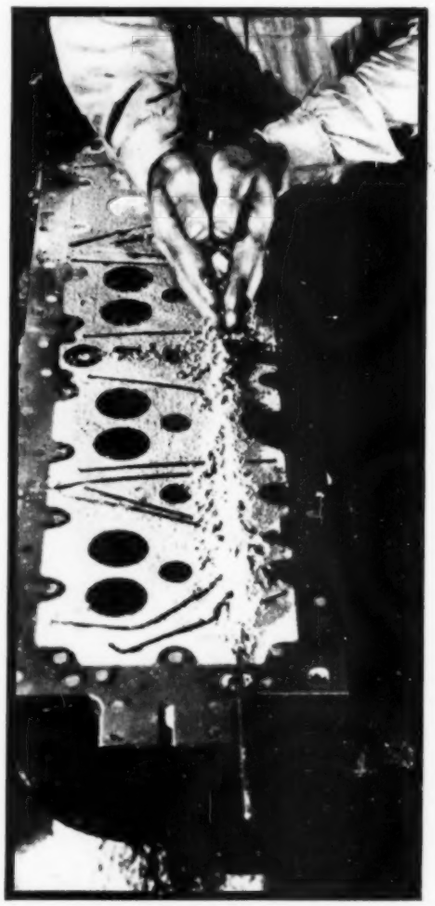
South Bend is typical because it is *not* infinitely awful. It is not simply a pile of industry raspingly flung together, but rather an old town with many trees and local legends of pioneers who settled there on the path of a romantically ancient Indian portage which joined two rivers. Nor are all its industries new. Many are its carpenter shops, both big and little, full of woody wood and shavings, suggestive rather of Nazareth than Dearborn. Rotarians, Kiwanians, and Elks feed religiously and daily together in great and complacent numbers, but you will also see the vast Victorian mansions of stern men long dead who made fortunes single-handed and who made nobody buddy but God. But still South Bend is typical, because so much of South Bend is so new. Its greatest industry is automobiles, which is also the greatest industry in the United States and the most typical of United States genius for mass, volume, speed, change, profits, and *da capo*. Old sanctities remain—but, to them, the several tycoons of the city are, for the most part, indifferent.

THIS BUCKET OF MOLTEN, RED-GOLD METAL WILL BE LADLED INTO MANY LITTLE MOLDS OF SAND

Carefully, therefore, and with the feeling that all America is before us, let us look into this city and trace out its pattern.

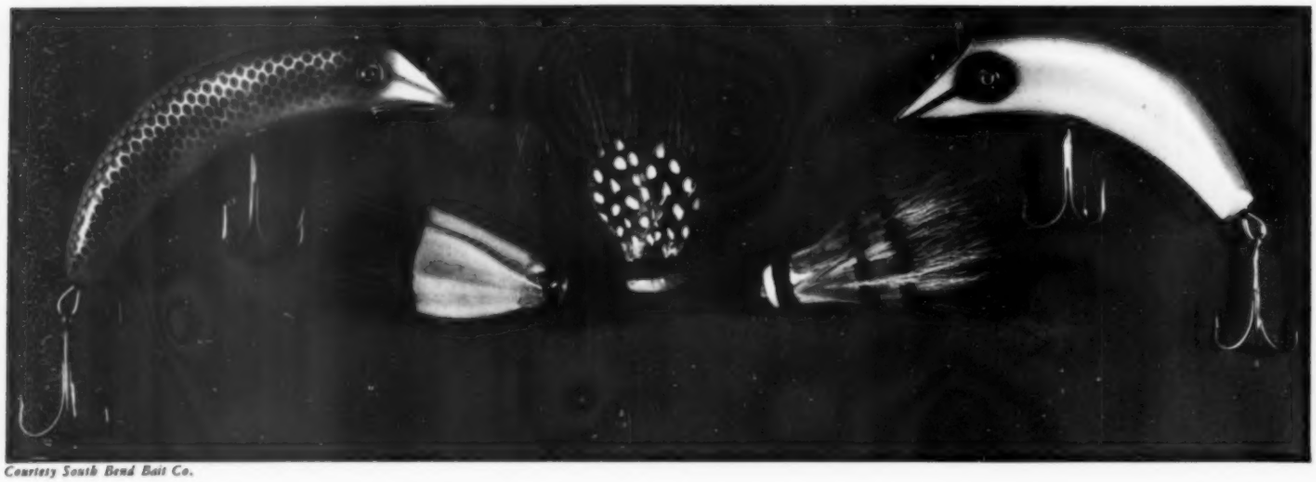
Some people will tell you that the First Presbyterian Church was built by a Studebaker. This, however, is not the case. Studebakers gave a third, Olivers a third, and the congregation the balance. That was typical of what happened in South Bend during the half-century between the Civil War and the Automobile. Studebakers got most of the credit; Olivers jealously matched them in fact; both together, but neither separately, were bigger than the rest of the city. More recently, more than a decade ago, both Studebakers and Olivers simultaneously offered to donate a Y. M. C. A. For some reason, the Studebaker offer was accepted. Today, most of the dozens of Studebakers have departed from South Bend; the less prolific Olivers remain but refuse to support a Studebaker Y. M. C. A., with the result that the burden resolves upon the Elks and other anonymous characters. The Oliver namesakes, a hotel and a theatre, are self-supporting. They were founded and run for a time by James, the founder of the whole Oliver business, but have long since passed out of the family's hands.

It was only last year that Olivers retired from public office. This they did by selling out the Oliver Chilled Plow Works to a general combine now called Oliver Farm Equipment Company. Deeply, if not tragically, significant is this for the year 1929. Grandly, egotistically, testily, Founder James Oliver had repeatedly stated that it was the "unalterable policy of the Olivers" never to merge. "No, sir," he pontificated on a memorable occasion in the early days of trusts, "no, sir, your talk of more money and less responsibility means nothing to me. I want my children always to feel the stress and strain of work, and never to forget the burdens of life, in order that they may respect the burdens of others. To be free to come and go is death—morally and mentally, if not financially. Not only do the Olivers run this business to make good plows but they run it for the economic and educational good of themselves . . . If it ever comes to a show-down, I'll take less money and more work rather than greater ease and more money. That is the policy of the Olivers . . ." The dynastic plural referred primarily to his son, Joseph, an abler man than the pioneer father, and quite different, having the tastes of a gentleman and a scholar. But the son, still keen enough to be considered an outstanding citizen, now nearing his eighties and without businessly brilliant progeny, yielded to the titanic forces of 1929 and permitted his company to merge. He sold out his holdings



EVERY AUTOMOBILE IS FIRST OF ALL MADE BY HAND—IN SAND. HERE THE "CORE" FOR SOMEBODY'S CRANKSHAFT

A TINY CORNER OF THE STUDEBAKER CORPORATION'S VAST FOUNDRY WHERE MEN ARE INSPECTING CYLINDER BORE CORES



Courtesy South Bend Bait Co.

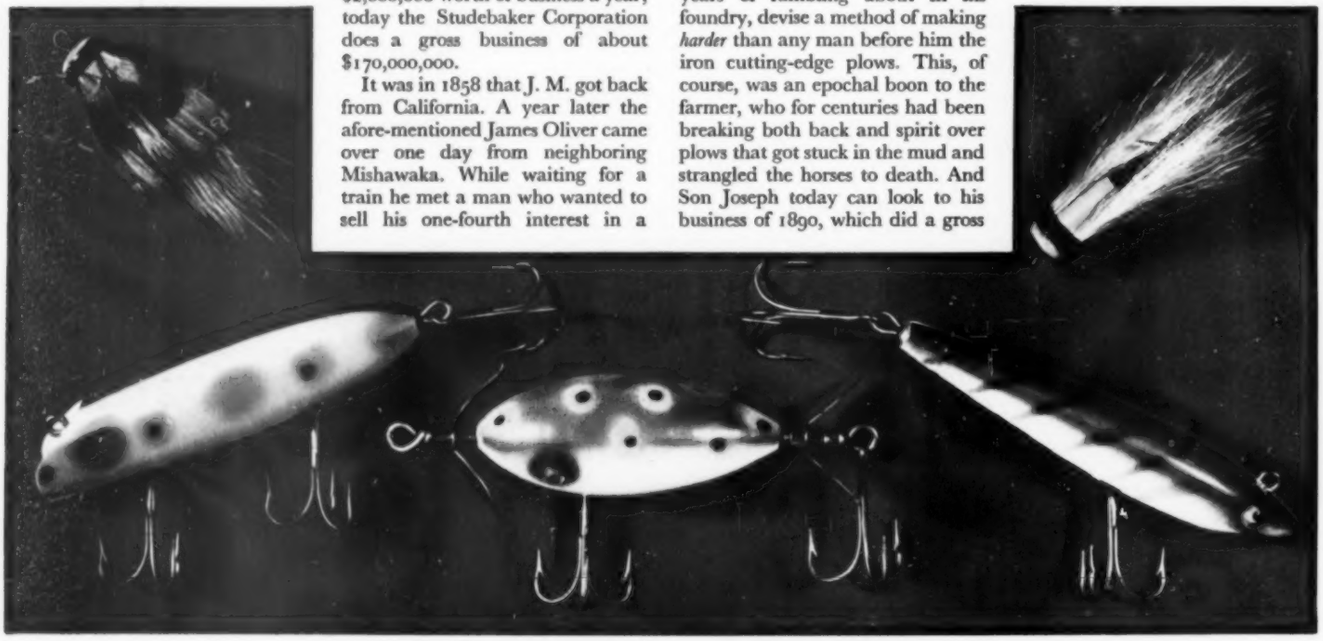
for so much money (principally cash) that he is now called the richest man in Indiana. Thus, last year, were definitely closed and audited the books of South Bend's first great era, the ledger of the new era having long since been opened.

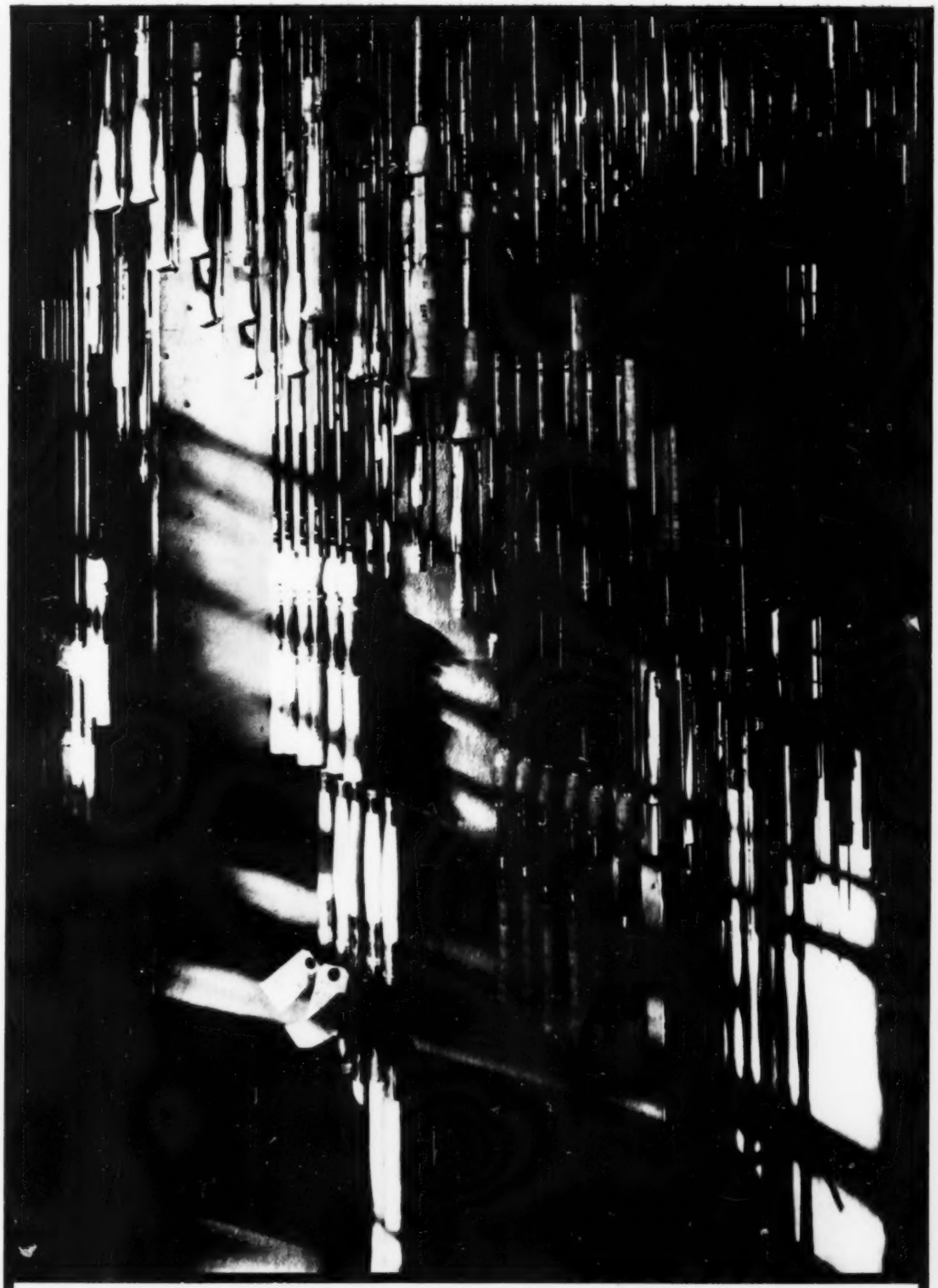
PRE-AUTOMOTIVE

It was the Studebakers, not the Olivers, who opened the books of the first South Bend era a few decades after the Indians had been driven away; but, principally, it was John and Clement Studebaker. It happened that John, known always as "J. M.," a younger son of a normally huge family, followed the sun in '49 across the maddening deserts and sullen rivers. One day a covered wagon caught up with him, in California, with a plea from two of his South Bend brothers, Henry and Clement, to return and help them make better wagons at the other end of the gold parade. Back he went and better wagons he made because he knew from observation exactly what was needed. With his $8,000 he bought out his brother, Henry, whose health was poor, and the business started to advance. By 1870, the Gold Rush was ancient history, but Studebaker was known to every farmer in the country as the biggest maker of medium-priced wagons. Thus the Studebaker fortunes grew, huge for those days, although small by modern standards. About 1890, they were doing $2,000,000 worth of business a year; today the Studebaker Corporation does a gross business of about $170,000,000.

It was in 1858 that J. M. got back from California. A year later the afore-mentioned James Oliver came over one day from neighboring Mishawaka. While waiting for a train he met a man who wanted to sell his one-fourth interest in a foundry at just inventory value. In a few hours the quarter of a foundry was appraised at $88.96, and luckily, James Oliver had $100 in his pocket. This tough, shrewd, but somewhat ornery Oliver had been brought as a baby from his parental Scotch hovel. To date, his only distinction had been to ride on the first sixteen miles of the New York Central (Albany–Schenectady) and to marry the daughter of the man in Mishawaka who had a two-story house with a fence around it. Clearly, however, he had in him some of that iron which matched so well the barbarism of the times. He was an inventor more by will power than by genius. But even if pure science ignores his name, it cannot be denied that he *did*, after years of fumbling about in his foundry, devise a method of making *harder* than any man before him the iron cutting-edge plows. This, of course, was an epochal boon to the farmer, who for centuries had been breaking both back and spirit over plows that got stuck in the mud and strangled the horses to death. And Son Joseph today can look to his business of 1890, which did a gross of $1,132,000, then reflect that the new combine will run close to $35,000,000 this year.

Thus, then, was South Bend put on the map. And during the 19th century Studebakers and Olivers made nearly all its history. Under their shadow many a smaller industry grew up, and at least one great affair, the cabinet works of the gigantic Singer (sewing machine) Manufacturing Company, came to the city. It was a natural step even so long ago as 1868. South Bend's Saint Joseph River would furnish water power. And the uncounted acres of virgin forest—rich in hardwoods like walnut, oak, and maple—would be good timberland for a company whose main object in coming to the Middle West was to





The South Bend Bait Company, a nice million-dollar business, gets bamboo from China, steel hooks from Norway, chicken feathers from any chicken and supplies one tenth of the essential equipment for America's amateur fishermen. Here completed rods, each delicately balanced, are shown in the drying room.

have a place to make cabinets to house sewing machines.

South Bend townsfolk at the turn of the century were interested in the Singer plant because to them it typified industry of the era. Today more cabinets are made than ever before—some 700 per hour, nicely veneered cabinets transformed from the 54,000,000 board feet of lumber stacked and conditioned in the yards. A great number go to foreign parts, even into the hidden corners of Asia. In America, Singer is more significant in the factory than in the home, making, as it does, machines for sewing everything from shoes to automobiles in the mass.

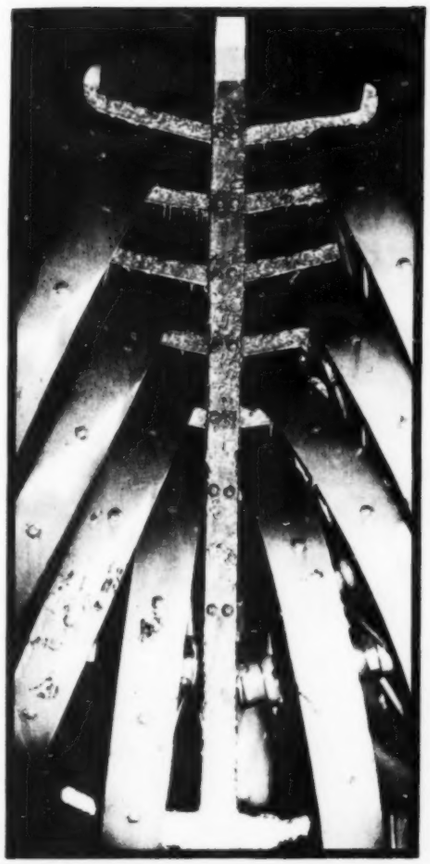
South Bend industries employ mostly man power. Back in 1885 the Wilson Brothers of Chicago—four of them—decided to move their shirt factory to South Bend. Their decision rested on one and only one fact: men have women. What were the womenfolk, the daughters, the sisters of South Bend workers doing with themselves? A lot of them were probably doing nothing, reasoned the Brothers Wilson, and a lot of them would like to be doing something; wealth was not a household word in South Bend then, any more than it is today. So to South Bend went the Wilson factory and to the factory flocked ambitious young women, where they found they could make more than mere pin money. Skilled labor? The Wilson company trains its own, cares not at all that most people seem to think that needlework industries must go to Troy, N. Y. in order to prosper. No longer, of course, does the company, now owned by sons and grandsons of the founders, make only shirts, although of those they do make 6,480 a day; underwear, neckties, hosiery are potent parts of Wilson Brothers today. It is their frank boast that theirs is the only concern which manufactures a complete line of men's haberdashery, and sells to every city and hamlet in the United States. They have but one other boast: that only once, and then just for three weeks (in 1920) has their factory been closed because of bad times.

Thus, then, are kept pleased the young ladies of South Bend who want to work; it is the only typical feminine industry in the town. And most typical of the smaller industries that have little use for fair hands is the O'Brien Varnish Company. Perhaps it is that women do not like the smell of paint and varnish or do not enjoy using harsh sandlike soaps two and three times a day to get smudges of color off their hands and faces and clothes. For in the O'Brien plant everything is varnish; you can smell it in the offices even if you have a cold; you can see it on the floors and walls; great ceiling-high tanks are full of it; huge copper kettles are constantly cooking it—fire-hot kettles in ice-cold rooms. Most of the O'Brien varnish cans go out with a statement on them: "A varnish that dries in two hours." Other varnishes, as all good painters know, take longer to dry. How the O'Brien varnish is made so that it will dry quickly only a few in the plant know and they won't say. That partly explains why Mr. George O'Brien has one of the best of the small paint companies, and sells around $2,000,000 worth of varnishes, paints, enamels, and stains yearly. (Sherwin-Williams sells $75,000,000 worth.)

Perhaps not at all typical of the heads of smaller industries, but quite typical of the age in which he was at his prime, is old Mr. Frederick H. Badet. He has just passed his eighty-third birthday. He is slightly deaf and diminutive and a little indifferent to the strident claims of a billion dollar era. Yet you will find him most any day behind a creaking roll-top desk in the quiet corner of a little room in a little ivy-covered house which serves as office building for the ivy-covered plant of the South Bend Toy Mfg. Co. He will not bother to tell you, but others will, that in 1874 girls were permitted to stretch their limbs only in extreme privacy or on the croquet court. While it never entered Mr. Badet's head to invade the privacy of the girls of 1874, it did occur to him to take some profit from their only public sport. And croquet balls he forthwith set himself to make—only a few and by hand or with simple tools. Today his concern, no longer actively managed by him, does an annual business of not quite, but nearly $1,000,000; a nice little business. Although it is called a toy company, it is not at all like a toy store. In fact, it really makes no

AN AUTOMOBILE ASSEMBLY LINE. BODIES HAVE JUST BEEN LOWERED INTO POSITION.

HERE THE RED-GOLD METAL COMES RIGHT FROM THE BUCKET AND IS POURED INTO THE MOLDS.



AGRICULTURE BEGINS IN THE FOUNDRY—WHEELS FOR THE FARMER

toys. But it does make chairs and tables, tiny little things for big dolls to sit in. These are made by some 200 men scattered about a sizable carpenter shop. Wood is everywhere. And around nearly every woody corner you find a splash of paint, baby blue and baby pink. Most of the painting is done by dipping the chairs or tables into a big tub of paint. In one corner the hairy arm of an ex-policeman is engaged all day long in giving the sentimental chairs their bath. And in another corner an ex-prizefighter swings a hairy arm extended and dips little tables in blue.

More delicate is the job of painting the multicolored stumps and mallets of croquet sets. A man with a paint brush sits before a whirling holder. Into the holder he puts a naked mallet. As the mallet whirls he touches his brush to it. Zip, zip, zip—he has made at three different places on the mallet three rings of purple. And, later in its career this mallet will get zip, zip, zip, three bands of red. For still today, old Mr. Badet has the satisfaction of seeing the same sets of croquet shipped from his carpenter shop—east, west, north, south. What if he grosses only $1,000,000? He will die in peace, the founder of a business.

And what if the three Cousins Stephenson gross but $750,000 a year? They will tell you that their business is not as profitable as it might have been had the male descendants of Mr. Badet's croquet-playing ladies continued to wear long, itch-inviting woolen underwear. For when the Stephenson Underwear Mills were founded by a grandfather of all three, he made none but woolens and swore that if "heavies" ever went out, they would be back before long. As everyone knows, they never came back. But today, Donald K., George M., and J. A. Stephenson have a pleasant little business that gives them comfortable homes and cheerful dispositions, even though they recently have found it necessary to make many kinds of underwear, and even more recently acquire the Charles Alshuler Manufacturing Co., a Racine shirt company, to expand their business and satisfy their salesmen.

THE AUTOMOTIVE AGE

Enter, now, with the clang of steel, the roar of furnaces, the toots of financiers, and the honks of salesmen, the great Modern or Automotive Age. And, of a sudden, we find more babies born in South Bend than the local journalist can record the names of—babies produced by a total of 110,000 population whose manufactures are worth $300,000,000 a year. What now is South Bend, what now is the perfect microcosm of the golden age of the Industrial Era?

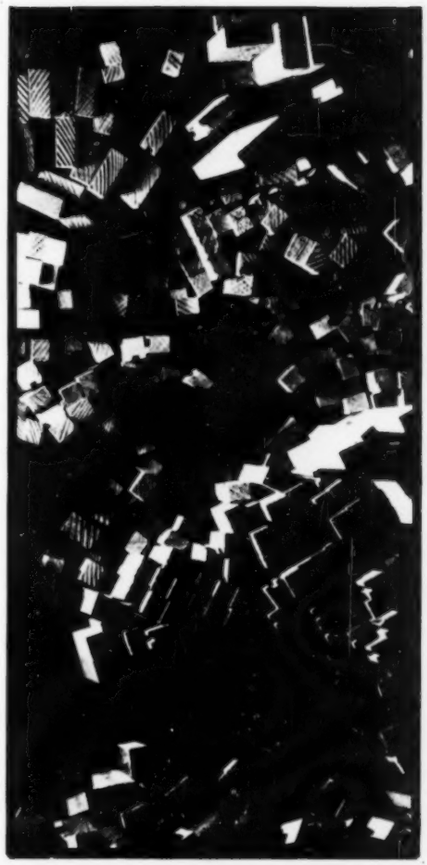
South Bend today is divided into two almost equal halves: those who make things and those who supply the makers with whatever their wages will buy. The latter is the visible half: butchers, bakers, grocers, movie palaces, gasoline filling stations on every other corner, realtors, barbers, candy stores, morticians, trolley cars, "eat" signs, parks, banks. This half is noisy and talkative. Taken as a whole it doesn't make much money, but it is full of watery adolescent hopes, and so it is always reaching for a tip or thinking up a slogan or dreaming of marrying a man with a Packard or reading *Liberty* while it waits.

The other half, the makers, is the army of South Bend. It has officers and sergeants and corporals and privates. The officers are few, relatively much fewer than any military army; their morale is higher. Studebaker employs 15,000 men and commands them with less than 50 men drawing $10,000 per year or more, which would be the equivalent of about one West Pointer for every company in the United States Army. The South Bend privates are well paid. They labor without complaint and without hope. Were it necessary to recruit the army of South Bend from such as you and I, there simply would be no Industrial Age.

This army does its work not on drill grounds, but in barracks—barracks so vast that it is never possible to see from one end to the other. The privates line up, not in mass formation, but at intervals of a few feet or a few yards. Mostly they are in long lines, hundreds of yards long, each with a machine in front of him before which he makes regular motions.

The foundry, the forge

At least half of all industry depends upon the foundry and the forge; i. e., the blacksmith shop. The foundry is about twenty acres under a roof held up by a forest of pillars. Along one side will



MANY ARE SOUTH BEND'S CARPENTER SHOPS—THE BIGGEST AND WOODIEST MAKES SINGER SEWING MACHINE CABINETS FOR NATIVES OF EVERY COUNTRY

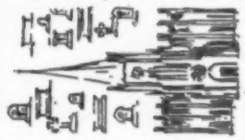
be a row of brick ovens as big as cottages. Out of them stick spouts like bigger and stiffer elephants' trunks. From the spout a stream of gold-red molten iron flows rapidly into a big bucket. When the bucket is filled, the stream is shut off and the bucket disappears down the lane, being carried by an overhead trolley which takes with it a couple of half-seen men in a kind of side-car contraption. If you run after the bucket you presently see that it stops. Two men will grab it, tip it, emptying its gold-red stream into ladles which are held out to receive it by brawny men, Negroes, perhaps, one after the other. The brawny men walk away with their ladles, which have very long handles. They walk through rows and rows of mud pies. They are not really mud pies, but neatly constructed sand molds with a hole at the top. Into these holes the brawny men empty their ladles, and then something is almost made: a crankshaft or an axle or the base of a plow or the leg of a sewing machine. Wherever it is, the foundry always looks, or rather *feels*, the same. It is heavy, not so much with smoke as with darkness. The darkness smells of decomposing substances: coal oil, molasses water, corn flour, and sea coal. It does not terrify, it numbs; you cannot remember green, you can remember nothing . . .

[*Continued on page 102*]

XUM

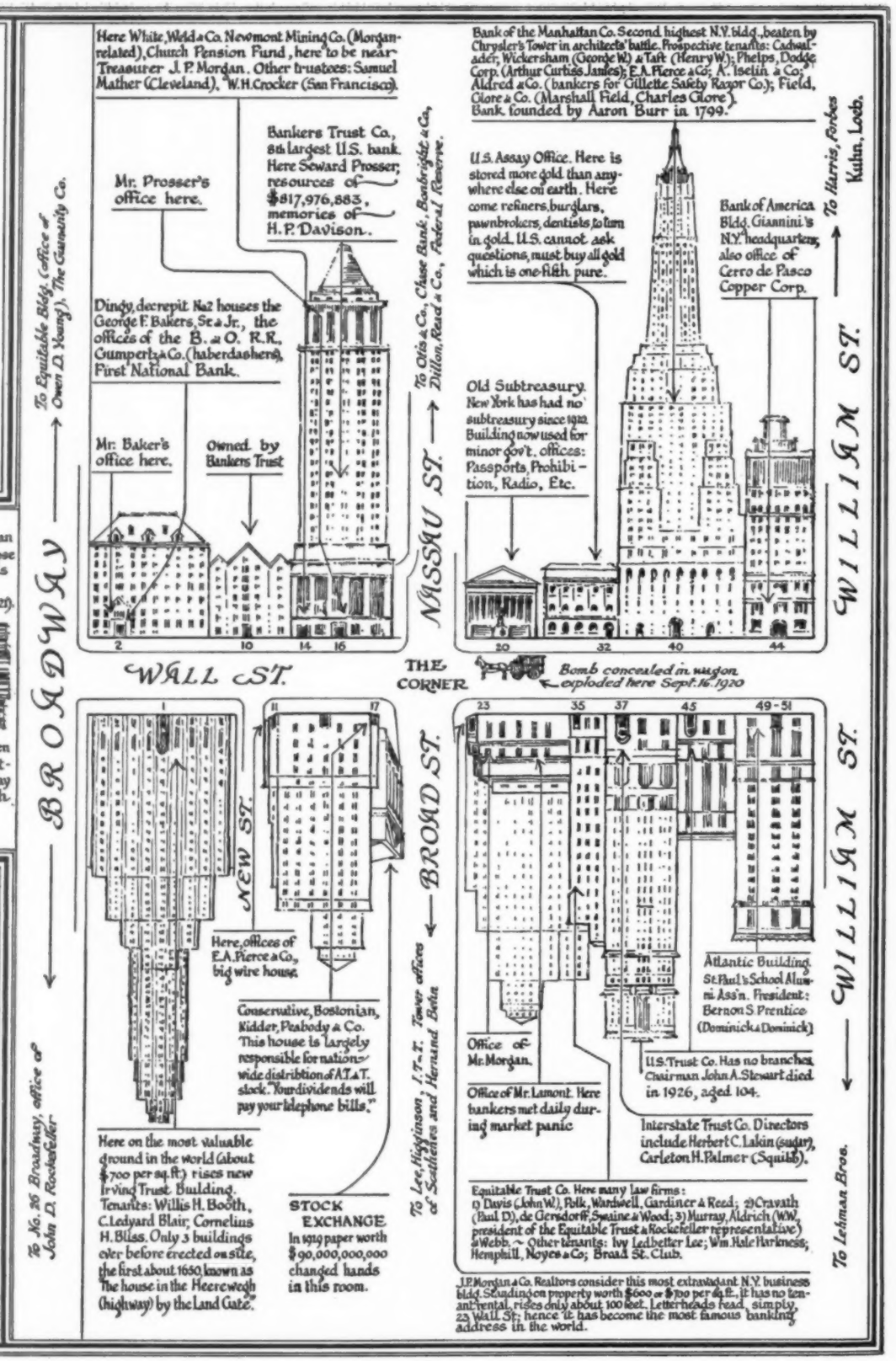
THE MAP OF WALL STREET

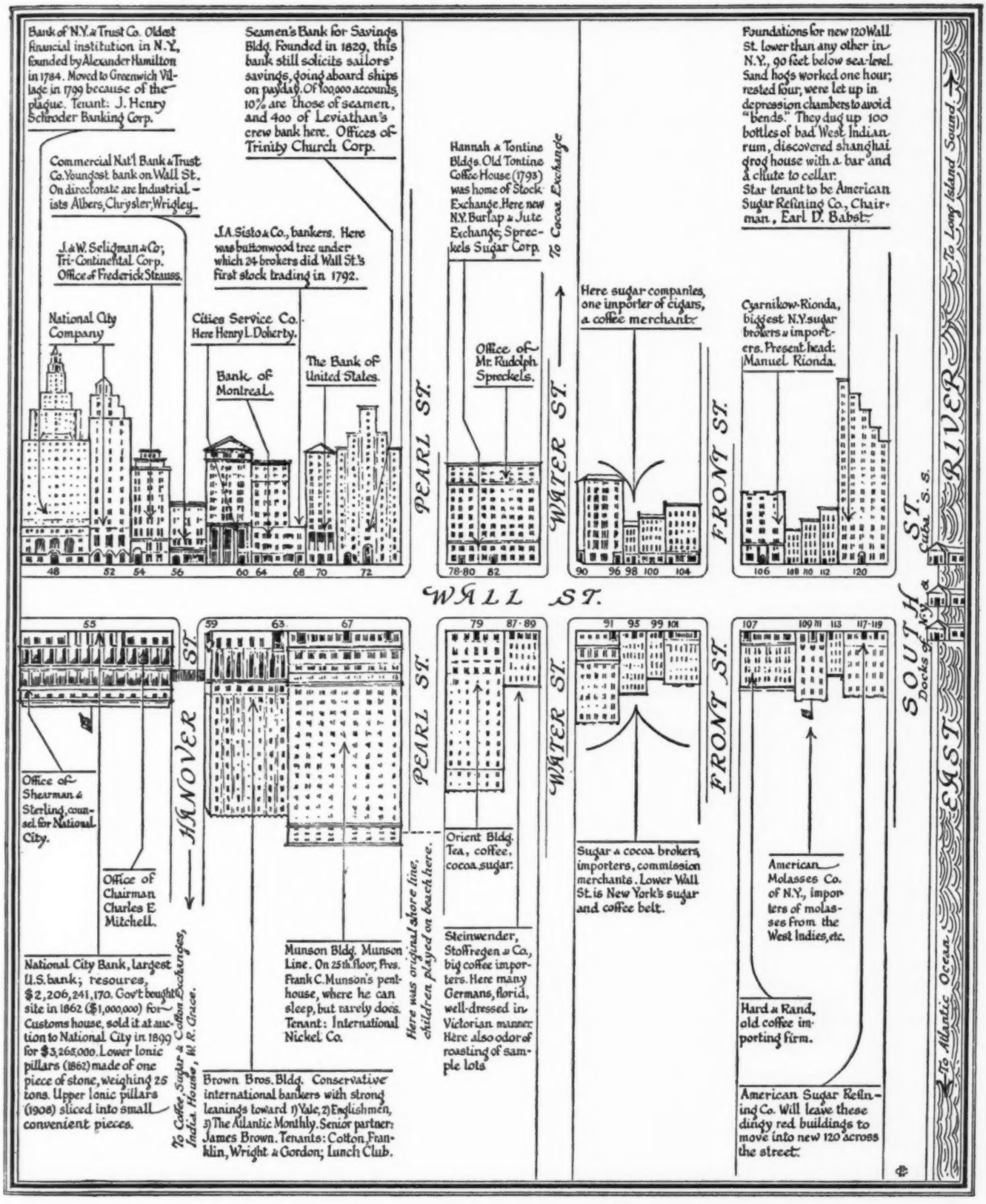
Trinity Church is large Manhattan landowner, with properties whose book value is $15,022,236. Rentals total over $1,000,000 annually. Bishop Manning was rector (1908-21).



Vestrymen: John Erskine (Helen of Troy); Thomas C.T. Crain (District Attorney); William Barclay Parsons. Office of Trinity Church Corp. at 72 Wall St.

THE STREET WITH A GRAVEYARD AT ONE END AND AT THE OTHER END THE RIVER


Here White, Weld & Co. Newmont Mining Co. (Morgan-related), Church Pension Fund, here to be near Treasurer J. P. Morgan. Other trustees: Samuel Mather (Cleveland), W. H. Crocker (San Francisco).
Bankers Trust Co., 8th largest U.S. bank. Here Seward Prosser; resources of $817,976,883, memories of H. P. Davison.
Mr. Prosser's office here.
Dingy, decrepit No2 houses the George F. Bakers, Sr. & Jr., the offices of the B. & O. R.R. Gumpert's & Co. (haberdashers), First National Bank.
Mr. Baker's office here.
Owned by Bankers Trust
To Equitable Bldg., office of Owen D. Young). The Guaranty Co.
BROADWAY
To No. 26 Broadway, office of John D. Rockefeller
To Otis & Co., Chase Bank, Bonbright & Co., Dillon, Read & Co., Federal Reserve.
NASSAU ST.
WALL ST.
THE CORNER
Bank of the Manhattan Co. Second highest N.Y. bldg., beaten by Chrysler's Tower in architects' battle. Prospective tenants: Cadwalader, Wickersham (George W.) & Taft (Henry W.); Phelps, Dodge Corp. (Arthur Curtiss James); E.A. Pierce & Co.; A. Iselin & Co.; Aldred & Co. (bankers for Gillette Safety Razor Co.); Field, Glore & Co. (Marshall Field, Charles Glore). Bank founded by Aaron Burr in 1799.
U.S. Assay Office. Here is stored more gold than anywhere else on earth. Here come refiners, burglars, pawnbrokers, dentists to turn in gold. U.S. cannot ask questions, must buy all gold which is one-fifth pure.
Old Subtreasury. New York has had no subtreasury since 1920. Building now used for minor gov't. offices: Passports, Prohibition, Radio, Etc.
Bank of America Bldg. Giannini's N.Y. headquarters, also office of Cerro de Pasco Copper Corp.
To Harris, Forbes Kuhn, Loeb.
WILLIAM ST.
Bomb concealed in wagon exploded here Sept. 16, 1920
NEW ST.
Here, offices of E.A. Pierce & Co., big wire house.
Conservative, Bostonian, Kidder, Peabody & Co. This house is largely responsible for nation-wide distribution of A.T. & T. stock. "Our dividends will pay your telephone bills."
Here on the most valuable ground in the world (about $700 per sq. ft.) rises new Irving Trust Building. Tenants: Willis H. Booth, C. Ledyard Blair, Cornelius H. Bliss. Only 3 buildings ever before erected on site, the first about 1650, known as The house in the Heerewegh (highway) by the Land Gate."
STOCK EXCHANGE. In 1919 paper worth $90,000,000,000 changed hands in this room.
To Lee, Higginson, J.T.T. Tower offices of Seabrights and Hernand Bets
BROAD ST.
Office of Mr. Morgan.
Office of Mr. Lamont. Here bankers met daily during market panic
Atlantic Building. St. Paul's School Alumni Ass'n. President: Bernon S. Prentice (Dominick & Dominick)
U.S. Trust Co. Has no branches. Chairman John A. Stewart died in 1926, aged 104.
Interstate Trust Co. Directors include Herbert C. Lakin (sugar), Carleton H. Palmer (Squibb).
Equitable Trust Co. Here many law firms: 1) Davis (John W.), Polk, Wardwell, Gardiner & Reed; 2) Cravath (Paul D.), de Gersdorff, Swaine & Wood; 3) Murray, Aldrich (W.W. president of the Equitable Trust & Rockefeller representative) & Webb. ~ Other tenants: Ivy Ledbetter Lee; Wm. Hale Harkness; Hemphill, Noyes & Co; Broad St. Club.
J.P. Morgan & Co. Realtors consider this most extravagant N.Y. business bldg. Standing on property worth $600 or $700 per sq. ft., it has no tenant-rental, rises only about 100 feet. Letterheads read, simply, 23 Wall St.; hence it has become the most famous banking address in the world.
To Lehman Bros.
WILLIAM ST.


Bank of N.Y. & Trust Co. Oldest financial institution in N.Y., founded by Alexander Hamilton in 1784. Moved to Greenwich Village in 1799 because of the plague. Tenant: J. Henry Schroder Banking Corp.
Seamen's Bank for Savings Bldg. Founded in 1829, this bank still solicits sailors' savings, doing aboard ships on payday. Of 100,000 accounts, 10% are those of seamen, and 400 of Leviathan's crew bank here. Offices of Trinity Church Corp.
Commercial Nat'l Bank & Trust Co. Youngest bank on Wall St. On directorate are Industrialists Albers, Chrysler, Wrigley.
J. & W. Seligman & Co; Tri-Continental Corp. Office of Frederick Strauss.
J.A. Sisto & Co., bankers. Here was buttonwood tree under which 24 brokers did Wall St.'s first stock trading in 1792.
National City Company
Cities Service Co. Here Henry L. Doherty.
Bank of Montreal.
The Bank of United States.
48 52 54 56 60 64 68 70 72
PEARL ST.
Hannah & Tontine Bldgs. Old Tontine Coffee House (1793) was home of Stock Exchange. Here new N.Y. Burlap & Jute Exchange, Spreckels Sugar Corp.
To Cocoa Exchange
Office of Mr. Rudolph Spreckels.
78-80 82
WATER ST.
Here sugar companies, one importer of cigars, a coffee merchant.
90 96 98 100 104
FRONT ST.
Foundations for new 120 Wall St. lower than any other in N.Y., 90 feet below sea-level. Sand hogs worked one hour; rested four, were let up in depression chambers to avoid "bends." They dug up 100 bottles of bad West Indian rum, discovered shanghai grog house with a bar and a chute to cellar. Star tenant to be American Sugar Refining Co., Chairman, Earl D. Babst.
Czarnikow-Rionda, biggest N.Y. sugar brokers & importers. Present head: Manuel Rionda.
106 108 110 112 120
SOUTH ST. Docks & Piers for Cuba S.S.
To Long Island Sound
EAST RIVER
WALL ST.
55
59 63 67
79 87-89
91 95 99 101
107 109 111 113 117-119
HANOVER ST.
PEARL ST.
WATER ST.
FRONT ST.
Office of Shearman & Sterling, counsel for National City.
Office of Chairman Charles E. Mitchell.
National City Bank, largest U.S. bank; resources, $2,206,241,170. Gov't bought site in 1862 ($1,000,000) for Customs house, sold it at auction to National City in 1909 for $3,265,000. Lower Ionic pillars (1862) made of one piece of stone, weighing 25 tons. Upper Ionic pillars (1908) sliced into small convenient pieces.
To Coffee, Sugar & Cotton Exchanges, India House, W. R. Grace.
Brown Bros. Bldg. Conservative international bankers with strong leanings toward 1) Yale, 2) Englishmen, 3) The Atlantic Monthly. Senior partner: James Brown. Tenants: Cotton, Franklin, Wright & Gordon; Lunch Club.
Munson Bldg. Munson Line. On 25th floor, Pres. Frank C. Munson's penthouse, where he can sleep, but rarely does. Tenant: International Nickel Co.
Here was original shore line, children played on beach here.
Orient Bldg. Tea, coffee, cocoa, sugar.
Steinwender, Stoffregen & Co., big coffee importers. Here many Germans, florid, well-dressed in Victorian manner. Here also odor of roasting of sample lots
Sugar & cocoa brokers, importers, commission merchants. Lower Wall St. is New York's sugar and coffee belt.
American Molasses Co. of N.Y., importers of molasses from the West Indies, etc.
Hard & Rand, old coffee importing firm.
American Sugar Refining Co. Will leave these dingy red buildings to move into new 120 across the street.
To Atlantic Ocean

Good Taste in Advertising

Is flouted by the hard fighting George Washington Hill. With what result?

THE present emphasis upon the distribution (as opposed to the manufacture) of merchandise has brought to advertising a new stability, a new prosperity, and a new respect. During 1929 approximately $1,000,000,000 was spent in newspaper and magazine advertising alone ($785,000,000 in newspapers and $215,000,000 in magazines). The American Tobacco Company spent more than $1,000,000 a month on one single product (Lucky Strike cigarettes). Such mergers as Colgate-Palmolive-Peet, General Foods, and particularly Standard Brands have resulted in the formation of extremely large corporations dealing directly with the consumer and largely dependent upon advertising for the distribution of their goods. Advertising, long familiar on Main Street, became recognized by Wall Street as well.

Yet the very prosperity of advertising carries with it a potential menace, and in its very success there was the possibility of a failure. In advertising, as in almost every other American industry, 1929 was a great and bumper year. Yet that year was marked by an almost unprecedented internal advertising dissension. Hardly since the old patent medicine period has the question of advertising ethics been more pointedly raised or more heatedly debated. Such advertising men as Earnest Elmo Calkins of Calkins & Holden, Paul M. Hollister of Batten, Barton, Durstine & Osborn, and Frederick C. Kendall of *Advertising & Selling* found it necessary to institute a "crusade" against advertising which they described as "unethical," but which they obviously considered dishonest. There was a general feeling, in conservative advertising circles, that the goose which laid the golden eggs was not being very well treated, and that the more radical advertisers were sacrificing an ultimate prosperity in favor of an immediate gain. Radicals, on the other hand, argued that the primary purpose of advertising was to make sales and that the long series of tacit restrictions, accepted restraints, and gentlemen's agreements, which had grown up around advertising, were seriously detrimental to its effective selling force.

Mr. Hill's idea

Reference has already been made to the American Tobacco Company and its $12,300,000 appropriations for Lucky Strike cigarettes. As the most powerful survival of that American Tobacco Company, which Thomas Fortune Ryan joined and which the United States Government put asunder, the present American Tobacco Company does about one third of the cigarettes, one third of the smoking tobacco, and one fourth of the plug tobacco business in the United States. Its 1929 sales were in the neighborhood of $200,000,000. Furthermore, the American Tobacco Company is guided by an energetic, hard fighting, precedent-ignoring personality—the personality of its president, Mr. George Washington Hill. There is an old political saying that the King of England reigns but does not govern, that the President of the United States governs but does not reign, and that the President of France has neither the majesty nor the might of office. But Mr. Hill, apparently, both reigns and governs. Most large corporations, for example, have an advertising agency, an advertising manager, and a sales manager, among whom the company's advertising is largely determined. Mr. Hill, too, has an excellent agency (Lord & Thomas and Logan) and advertising department, but, according to his own statement, the basic principles of Lucky Strike advertising were determined by him personally; the central Lucky Strike advertising idea was "his own invention." Even the dance program of the Lucky Strike radio orchestra is rehearsed in Mr. Hill's presence, altered and rearranged according to his pleasure. The importance of this one-man aspect of Lucky Strike advertising is outstanding, because the present conflict in advertising procedure is essentially a conflict between agency tradition and the iconoclasm of an aggressive and determined individualism which stands outside that tradition and is not influenced by its commands and prohibitions.

The Lucky Strike advertising is not the only advertising which has excited the conservative advertiser, but it has certainly been the most alarming, the most sensational, and, from the conventional standpoint, the most subversive. Recent Lucky Strike advertising has fallen into four main divisions. For convenience sake, these divisions may be listed as (1) Toasting, (2) Anti-Sweet, (3) Ancient Prejudice, (4) Double Chin.

Toasting.—Through various vicissitudes of advertising appeal, the Lucky package has consistently carried the statement "It's Toasted." As a result of this toasting (Lucky advertisements maintained) the cigarette was freed of throat-irritating quality, could therefore be smoked freely without injury to the voice. This nonirritation idea was supported with testimonials from singers, actors, and vocalists in general. The idea was not unique (Old Gold cigarettes with their "Not a Cough in a Carload" slogan had much the same appeal), and the testimonials were no more extreme than in many other endorsement campaigns.

Anti-Sweet.—Then, however, in the fall of 1928, Mr. Hill had an idea. As he tells the story, his automobile was halted at a street intersection, and while he was waiting for its progress to be resumed, he saw two women. One woman—stout and unattractive—was eating what Mr. Hill says may have been a pickle, but which, he decided, was more probably a sweet. The other woman—slender and charming—was smoking a cigarette. "Ah," thought Mr. Hill, remembering the boyish figures that were then so much in vogue, "reach for a Lucky instead of a sweet." Soon after, the first of the "Reach for a Lucky" series appeared. Ethical or no, it was one of the most effective campaign themes since the Listerine—Halitosis inspiration. Besides its direct bid for women's trade, it appealed to everyone interested in the question of personal poundage, and it was considerably more plausible than a great many other advertising hypotheses. For after all, a pound of candy makes no one thin, and a pack of cigarettes makes no one fat. But the chief merit of the anti-sweet series lay in its sensationalism. Backed by an almost limitless expenditure, heightened by a series of testimonials (particularly from athletes), the new campaign appeared everywhere, and every-

where rated 100 per cent in attention value. It was not only read; it was fought over. Sugar men, candy men, and Senator Smoot protested. The campaign was made a focal point for an attack on testimonials in general. There were accusations that youth was being misled, the "Lucky Girl" poster was bitterly attacked, and Carl Sandburg saw a misconducted tobacco business resulting in the suppression of cigarettes as a misconducted liquor business had resulted in Prohibition. Amidst all the excitement Mr. Hill remained apparently undisturbed, maintaining that by stirring up so much discussion of sweets, he was really aiding the sale and distribution of sugar products.

Ancient Prejudice.—In the fall of 1929, however, the Lucky campaign shifted from anti-sweets back to its former anti-irritation. Instead of "Reach for a Lucky instead of a Sweet," there appeared the slogan: "An Ancient Prejudice Has Been Removed." The ancient prejudice, it seemed, was the notion that cigarettes hurt the throat. The removal, of course, was the result of the Lucky *toasting* process. The most striking feature of the "Ancient Prejudice" series was its Winsor McCay drawings. Freedom of speech, the advancement of science, the emancipation of women—progress in every form was pictured (in a before-and-after manner) by Mr. McCay, with the advertising text drawing the moral that just as, for instance, women were no longer slaves to male caprices, so cigarettes, through toasting, had been freed from the ancient accusation that they injured the throat. There was such a ghastly discrepancy between the tale and the moral that it lacked any power of conviction. Furthermore, whereas everyone had been more or less interested in sweets and fat, no one was concerned with cigarette prejudices, particularly since the prejudice that once did exist against cigarettes dealt rather with their effect on moral fiber than on vocal chords.

Double Chin.—So Lucky Strike advertising has again swung back to a modification of its dietary appeal. Now, however, it is anti-fat, not anti-sweet. It uses no testimonials, it specifically states that smoking Lucky Strikes will not result in a slender figure, and it attacks not indulgence but overindulgence, directing its fire against all forms of overeating, not merely against the consumption of sweets. It has, however, a slogan, "Avoid That Future Shadow," and a semi-cartoon illustration showing a single-chinned man or woman casting a double-chinned shadow—the ultimate result, of course, of "doing yourself too well." Shortly after the appearance of this new campaign, it was announced from Washington that the Federal Trade Commission had persuaded an unnamed tobacco manufacturer to "cease and desist" from unfair competitive methods, particularly from the use of testimonials in their more artificial form and from too specific statements regarding cigarettes and avoirdupois. The tobacco company in question was not specified, but, regardless of the Trade Commission's report, there is no question but that the anti-fat Lucky Series represents a distinct modification of its anti-sweet predecessor. The double chin was perhaps the happiest thought in the new series, for even though the fashionable figure is not now quite as perpendicular as it was in 1928, double chins have never been and will never be the vogue.

In all the discussion provoked by the various Lucky Strike campaigns, there was never much question but that they were selling Lucky Strikes, or that the most extreme (the anti-sweet) campaign was the best-seller. And here is where the Lucky Strike series is important, not as a phenomenon but as a tendency. Over a considerable period of years, conservative advertising men (especially conservative advertising agency men) had built up in advertising copy, in advertising art, and in advertising themes what might be termed a *tradition of dignity*. The most representative copy was chiefly what is termed *editorial*, a rather loose description which is hard to define, but easy to describe by example: the Scripps-Howard newspaper, the Pennsylvania Railroad, and the Ford aviation campaigns being excellent instances of the type. Considering limitations of space and subject, the writing of these advertisements calls for a very considerable craftsmanship. In illustration, in typography, and in layout, also, advertising standards of taste constantly improved, so much so, indeed, that in many a magazine the advertising pages were considerably more pleasing than the editorial. As far as advertising ideas were concerned, there was a strong prejudice against the controversial, the competitive, the sensational, and against anything which might possibly offend anyone.

This tradition of dignity has by no means vanished, but it has been notably absent from the Lucky Strike campaigns and from various other advertising efforts of less conspicuousness but of similar nature. There was nothing artistic about the Lucky series. Given the central slogan (whether "Reach for a Lucky" or "Ancient Prejudice" or "Shadow of the Future") and the remainder of the copy was purely a matter of routine. The chief typographical requisite was a certain screaming effect and, from an esthetic standpoint, the general appearance of the Lucky series was frankly hideous. And even in its most recent and most moderate form, the Lucky theme would be conventionally regarded as destructively controversial and dubiously competitive.

Yet the cigarette series unquestionably possessed one vital quality which frequently is fatally absent from the *nice* advertisement. That was the quality of force, of power. The weakness of the dignified advertisement was often that it possessed only dignity. Sometimes it gave the impression of having been written primarily to please its authors and only incidentally to please its readers, if any. The modern popular magazine often carries upward of 250 pages, in which any given advertisement must compete with all the editorial pages and all the other advertisements. The national advertisements in the modern newspaper must struggle not only against the news but with countless columns of retail advertising as well. Yet the chances are that virtually every Lucky Strike advertisement that was run was also read. Mr. Hill would say (except that he would not condescend to say it) that he is not interested in literature, in art, in typography, or in composition; that the conventional advertisement consists of bird shot scatteringly fired far over the target's head; and that he would rather get Lucky Strikes into the homes of the smokers than Lucky Strike advertisements into the art directors' shows.

Thus the situation and thus the conflict. The weak spot in the Lucky Strike position is, of course, that advertising of its type tends to become more and more a stunt, or a series of stunts, and that, in an attempt to get attention, the nature and qualities of the product itself become more and more constantly minor considerations. From the ethical standpoint, stunt advertisements do weaken popular faith in advertising, although only those who are extremely pro- or extremely anti-advertising fail to realize that all salesmanship, whether spoken or printed, is subject to discount without animus. From the professional standpoint, stunts tend to subordinate everything to a formula, yet the Old Gold "Blindfold Test" campaign was a very encouraging example of the fact that new tricks do not necessarily kill the old dog. Yet when everything that can be said for the Lucky Strike type of advertising (or for the "Spit" campaign on Cremo cigars, also affiliated with the American Tobacco Company) is said, one feels that the element of good taste cannot be so disregarded without a result which is, on the whole, regrettable.

XUM

Money Abroad

Other gods and other governments are the *agents provocateurs* of many foreign fortunes.

IT IS difficult to think of money without thinking of America. On the Continent, indeed, it appears difficult to think of America and to think of anything but money. Yet all great fortunes are not limited to the United States. To a certain extent, conditions in Europe and in Asia are more favorable to the growth of individual wealth. On the Continent, a man may be rich because he is a member of the nobility. In Asia, he will almost certainly be rich if he is even a minor ruler with a European Power behind his throne. Furthermore, even the foreign industrialist has some advantages over his American counterpart. A trust, in this country, is met with suspicion; a cartel, abroad, is met with government support. Competition is no god outside the United States; in a dozen European and South American countries the sale of matches, for example, is a government monopoly administered by a private monopolist—Mr. Ivar Kreuger and his Swedish Match Company. Thus, although generalizations are proverbially vicious, and although many a foreign rich man has passed through a career fundamentally similar to the progress of a Ford or an Eastman or a Rockefeller, fortunes abroad have certainly a more monopolistic tint than fortunes in the United States. A monopolist by the consent of his government; a monopolist by the grace of his god—in one of these two classes the rich men of other nations are more than likely to fall.

If, however, a world tour of foreign wealth begins (as it normally does begin) with the British Isles, the conclusion just arrived at meets with its most severe objections. The English economic theory has, of course, corresponded closely with the American, and England has its conventional "kings" of coal and textiles and steel and particularly of shipping. Yet many of England's fortunes were made in her colonies. Solly Joel went off to Africa and returned with figurative pocketfuls of diamonds, and Sir David Yule went off to India, remained for fifty years in Bombay, and came back the head of some eighty corporations and with control of a large portion of the world's jute. And much of England's native wealth remains in the hands of her landed aristocracy. Rich, for example, is the Duke of Westminster, largely because one of his ancestors acquired large properties in London and evolved a system of ninety-nine-year leases, the leased properties, including improvements, reverting to the lessor at the termination of the lease.

Where in England the rich have purchased the titles, in France the titles have lost the riches, so that France is wealthy in her industrialists, especially Louis Loucheur, whose utility companies supply most of France with electric light and power. M. Loucheur has also lapped over into railroads and (through his brother-in-law, André-Gustave Citroën) into automobiles. Other French industrialists have become prominent in more traditionally Gallic activities—the Gillets in silk, the Meniers in chocolate, and M. Coty in perfumes.

Puddles and frogs

Northern European fortunes run more to basic industries efficiently monopolized. Fritz Thyssen and the German steel cartel; Carl Bosch and the German dye trust (I. G. Farbenindustrie); Jacob Martin Michael, who cornered the post-War German mark; and Ivar Kreuger, whose match monopolies have already been mentioned, are typical instances of what, in this country, would be regarded as shocking examples of combinations in restraint of trade. It should always be remembered that neither France, Germany, nor Italy is as large as Texas, and that Europe has lately been as poor as the proverbial church mouse. Thus the industry of any given country is not likely to support more than one great corporation and Senator Agnelli in Italy, for instance, can make 50,000 Fiats a year and thereby nearly monopolize the Italian automobile business. Given a concentration of population, a scarcity of capital, and a public opinion which is more absorbed with politics than with industry, and each of the various little puddles is bound to produce its one big frog.

The customer is wrong

In South America, too, there is not much room on the top. Juan Vicente Gomez, with his estimated $100,000,000 is a very rich Venezuelan, has also been the virtual dictator of Venezuela for some twenty years. In Brazil nearly every industry except the coffee industry is connected with Count Francisco Matarazzo, whose interests range from perfumery to railroads. Countries that are not primarily industrial offer a rare opportunity to one gifted industrialist.

Once out of Europe and east of Suez, all the normal laws of production and distribution vanish, especially the one about the customer being always right. Leaving the monopolistic, we have arrived at the absolute. The Nizam of Hyderabad (a British Indian principality) can even say, "Off with his head," with a fair chance that the head, if it is a native head, will actually "off." Whatever the oriental's title may be—Aga or Shah or Maharajah or Lama or Nizam, he is always royal and he always collects large royalties. Sometimes, like the Aga Khan, he spends most of his time in Europe and learns to golf. Sometimes, like the Gaekwar of Baroda, he tries to improve the condition of his people. Sometimes, like the aforementioned Nizam of Hyderabad, he is just a good old Arabian Night with few redeeming features. His wealth runs largely to precious stones, especially diamonds, in which form it does nobody any good and is an excellent example of a socially frozen asset.

In the following pages, thirty large fortunes are briefly noticed. Their locale varies from sober London counting houses to secluded Tibetan monasteries. Their origins range from the daughter of Mohammed to inflated post-War currency. They include tin and diamonds and steel and electricity and ocean liners and the process of taking up the white man's burden and the dark man's resources. The best "mystery men of Europe" and several persons widely recognized as "richest in the world" are included among them. Most of them (American-trained Mr. Kreuger is a notable exception), having made their money, go in for politics or pleasure or both. Which proves, no doubt, that abroad there is no materialism.

Thirty Large Fortunes

Are here presented, with their possessors, in a parade headed by England.

© Keystone

SOLOMON (SOLLY) BARNATO JOEL (above) left London's Jewish "Petticoat Lane" and started diamond hunting in South Africa almost 50 years ago, and has a share in most of the diamonds that come out of South Africa today. In 1884 his brother Jack was involved in an Illicit Diamond Buying case, jumped bail, and returned to England. Woolf, his other brother, was shot and killed in 1898.

Meanwhile, he and the Barnatos, his partner uncles, prospered, although they were accused of having aided in the raid which brought on the Boer War, and were certainly sympathetic to Cecil Rhodes' plans of British African Empire. They formed the firm of Barnato Brothers, of which the Joel brothers are now sole partners. Barney Barnato, enroute from South Africa to England, jumped overboard, and Harry Barnato died in 1908, leaving the Joels about $12,500,000.

Both Solly and Jack are best known through their racing stables. Solly divides his time between his office at Austin Friars, London, and the capital of his diamond kingdom at Capetown. From Africa he has brought back not only diamonds but such a curious cargo as a zebra, two secretary birds, and a meerkat. These household pets may help compensate for a family life not without its troubles. His once-favorite daughter, Doris, eloped with a chauffeur; a son, Stanhope, secretly married an American girl; and another son, Lieutenant Woolf Solomon Joel, died at sea after going bankrupt on an allowance of $12,000 a year. There remains Eileen, Solly's twenty-two-year-old daughter, after whom Solly's yacht, *Eileen*, is named. But the yacht *Eileen* used to be the yacht *Doris*.

LORD GLENTANAR (below, right), SIR STUART AUCHINCLOSS COATS, and SIR THOMAS GLEN-COATS (below, left), are present heads of J. & P. Coats, Ltd., whose Scotch (Paisley), American (Pawtucket and Newark), and Canadian (Montreal) factories turn out a considerable percentage of the cotton thread that holds on the world's buttons. The business was founded in 1824 by James Coats (James the First) whose sons, James the Second, Peter, and Thomas, all went into the business. Succeeding generations produced a great many Coats, of whom the first Lord Glentanar (father of the present Baron) was the wealthiest. His estate totaled 4,642,263 pounds. Six other Coats who left more than a million pounds were Peter Coats, 2,526,270; James Coats Jr., 1,964,745; Sir James Coats, 1,773,870; Archibald Coats, 1,499,125; Daniel Coats, 1,234,802; Sir Thomas Glen-Coats (first baronet), 1,725,606.

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Acme

ENGLAND'S richest woman is probably MISS GLADYS YULE (below, right) and England's most active business woman (below) is the VISCOUNTESS RHONDDA (pronounced Rontha). When Sir David Yule, Calcutta jute king, died in July, 1928, he left his daughter some $100,000,000, intricately and deliberately tangled up in Indian jute holdings. Thus he spared his daughter the penalty of death duties (inheritance tax). Just as adequately is she spared any concern about Bengal labor or weather conditions, or current quotations on the New York Burlap and Jute Exchange. She lives in strict solitude with her mother in Hertfordshire, where she collects dogs, horses, and zoo animals. The bales of matted, tangled fiber are now the proper concern of the present ruling jute kings, J. P. Morgan & Co.

Long before the death of the late D. A. Thomas, first Lord Rhondda, Welsh coal king, his daughter Margaret had become conspicuous as an industrial executive. She is chairman of seven companies, director of many another. Her feminist principles once got her into jail, and later almost got her into the House of Lords.

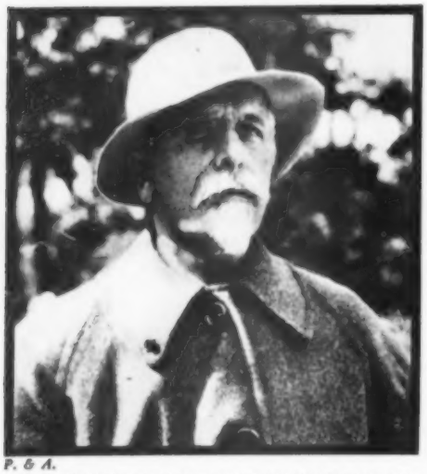
Rich, too, is Lady Houston, widow of Sir Robert Houston (shipping), whom she firmly believes was murdered and on whose grave she has inscribed the words: *Who died most mysteriously*. For some time she refused to pay death duties from her $35,000,000 inheritance. Finally, after a luncheon with Winston Churchill, she gave him a check for $7,500,000. Mr. Churchill has said, "Death is almost the only friend of the Treasury."

Wide World

International

HUGH RICHARD ARTHUR GROSVENOR, Second Duke of Westminster (nicknamed Ben d'Or), has consistently conducted himself according to the best traditions of motion picture dukes. From Paris to Monte Carlo to Biarritz to Nice flits His Grace, to the accompaniment of old wines and young women. Greatly he enjoys tossing diamond rings from his yacht for cabaret girls to dive after. He has had two wives, two divorces, and innumerable guests and visitors. In January was announced his engagement to Miss Loelia Mary Ponsonby, daughter of Sir Frederick Ponsonby. His Grace has frequently fretted London society, especially when he sold Gainsborough's *Blue Boy* for about $750,000 to Henry E. Huntington, of California, U. S. A. The family fortune rests largely upon the ownership of some 600 acres in the West End of London, a holding comparable in importance to the Astor properties in New York.

France, Germany



P. & A.

ZACHARIAS BASILEIOS ZAHAROFF, Sir Basil Zaharoff (above), at one time controlled Monte Carlo and might also be said to have held at least a large minority interest in the World War. Indeed, Sir Basil has been interested in almost every war since the Russian-Turkish in 1877, and after many comparatively small wars had made him a very rich man, the World War brought him into that select circle whose various members have all been reported as world's richest. He was born (of Greek parents) in Asia Minor; he has his title from England and his residence in Paris and has lately spent his time being wheeled around Monte Carlo in a bath chair.

Sir Basil got his real start in life when in 1877 he was made Balkan agent for the Nordenfeldt Gun and Ammunition Co., Ltd., of England, which became a great international armament company when it merged with the Maxim Gun Co. Thus it acquired the patents of Hiram Maxim, who began by inventing a mousetrap that would catch several mice at the same time and progressed to the invention of his famous gun, which could kill 600 men in one minute, provided, of course, that a man got in front of each bullet. The Maxim gun rapidly became standard throughout Europe, although the King of Denmark had to do without it because of the cost of firing it. Li Hung Chang, Chinese prince, discouragingly remarked, "This gun fires too rapidly for China." But the Great and many Minor Powers bought many Maxims. In 1897 the Maxim-Nordenfeldt combination was absorbed by Vickers and what with the Spanish-American War and the Boer War the business continued profitable. Then came the Russo-Japanese War, various Balkan wars, and finally the World War.

After the War, Sir Basil got himself connected with possibly the only military enterprise in which he lost instead of profited. He is believed to have brought Greece into the War and is thought to have influenced Lloyd George in securing England's tacit consent to the Greek-Turkish campaigns after the main war was over. If popular impression is well founded and Zaharoff personally underwrote the post-war Greek operations in Asia Minor, grievous must have been his disappointment. For the Turks killed or captured nearly the entire Greek Army.

With all his titles, power, and money, Sir Basil always remained far behind the scenes and was commonly termed the "Mystery Man of Europe." A few years ago, when a French newspaper asked for his life story, he replied: "M. Zaharoff, n'ayant pas de voix, ne peut pas chanter."

FRITZ THYSSEN (below) inherited the Thyssen steel business from his father, August Thyssen, who died in 1923. August managed his business single-handed, shared none of his authority, left what was estimated as the largest personal fortune in Germany. Now Fritz has even more money than August, but the business is no longer a personal affair. Shrewdly, Fritz merged the family properties with other companies in Germany's great steel cartel. During the French occupation of the Ruhr, Herr Thyssen was taken prisoner by the French, became a popular hero. He is the second son of August, but of the elder son, August Jr., little is heard.

International

Keystone

JACOB MARTIN MICHAEL (above), during the 1923 inflation in Germany, succeeded in establishing a money corner. At a time when it took a dozen billion marks to buy a cup of coffee, Herr Michael accumulated marks by the trillions and quintillions. The Government finally stabilized this mark (at 4,200,000,000,000 to the dollar) and established it as legal tender while the new marks were being printed. Thereupon Herr Michael, with a practical monopoly of the old currency, loaned his no longer worthless paper at 20 per cent interest and emerged worth some 100,000,000 in the new gold marks.

HENRI LETELLIER (below) designs gowns for women and casinos for resorts. He inherited *Le Journal* from his father, and is backing the *Boulevardier* for his former secretary, Erskine Gwynne. Once, after one of the most skillful of Parisian couturiers had designed a gown for a woman of M. Letellier's acquaintance, M. Letellier decided that the creation was notably imperfect, brought the girl back to the couturier and had her attired according to his specifications. M. Letellier is about 60, which makes him rather an elderly *boulevardier*. But his appearance, as this photograph testifies, is one which accepts youth and age with equal grace, and his temperament is still very Latin.

P. & A.

Keystone

LOUIS LOUCHEUR (at right) is frequently described as the richest man in France, although the Gillets of Lyons (silk and rayon) might dispute the honor. He dominates the French electric light and power industry. The War interrupted his electrification of French railroads, but brought him into public life, via munitions and coal. He is the brother-in-law and backer of André-Gustave Citroën, whose automobile factories turn out about 70,000 cars a year. Under his direction the war-time Russian railroad between Petrograd and Murmansk was constructed by Austrian war prisoners, who spent their time laying ties and contracting typhoid. So many of them died that the railroad has been said to rest on a foundation of bones. M. Loucheur is as cultivated as he is wealthy and writes poetry during his few moments of leisure. He has been in many of France's many Cabinets, and is at present Minister of Labor.

North, South, and Central Europe

THOMAS BAT'A (Batya) (above) is another of Europe's many "Fords," but Mr. Bat'a, who makes not automobiles but shoes, in some ways justifies the comparison. His factories at Zlin, Czechoslovakia, can turn out 80,000 pairs of shoes a day. More important, however, is the fact that Mr. Bat'a, combining American mass production methods which he learned at Lynn, Mass., with industrial paternalism in one of its most extreme manifestations, can make for from $1.80 to $2.40 a shoe which costs Lynn manufacturers from $2.65 to $3.75. (Lynn is most concerned with Mr. Bat'a because both he and the Lynn shoe manufacturers make the same type of shoe—low-priced novelty McKays for women.) Furthermore, other European shoe men have so well imitated the Bat'a technique that U. S. shoe manufacturers anticipate the arrival of some 6,000,000 foreign-made shoes during 1930.

Mr. Bat'a himself has a certain tendency toward the naïvely sententious, is fond of such aphorisms as "Business is a service to the people," "Struggle is the father of all," and "Our customers are our masters." His low production costs are partly the reflection of low wages, which run from $5.40 to $13.50 a week, or about one-third the corresponding American wage. Yet Mr. Bat'a's employees live well. At Zlin Mr. Bat'a has built homes, hospitals, gymnasiums, libraries, a theatre, a motion picture house, playgrounds, and schools. In effect, he is a benevolent despot, operating a feudal system over which he rules much like the barons of old. It is a system which depends a good deal upon the docility of labor, and would not last long in this country. But, combined with an integration which ranges from control of raw material to the operation of some 400 retail stores, and also with the most ultra-efficient American machinery and factory methods, it supplies one of the relatively few forms of foreign competition which the American manufacturer almost admits as unmeetable.

JACOBO MARIA DEL PILAR CARLOS MANUEL STUART FITZ-JAMES (right) is 10th Duke of Berwick and 17th Duque de Alba de Tormes. In the accompanying Zuloaga portrait, the Duke looks very much the Grandee that he is. With interests ranging from dachshunds to the new Spanish cabinet, in which he makes his bow to politics, His Grace is also on the same corporate executive committee as Sosthenes Behn. The corporation is the Standard Electrica Sociedad Anonima, a subsidiary of the International Telephone & Telegraph Company, which in 1924 took over the Spanish telephone and telegraph system, beginning its career in international communications.

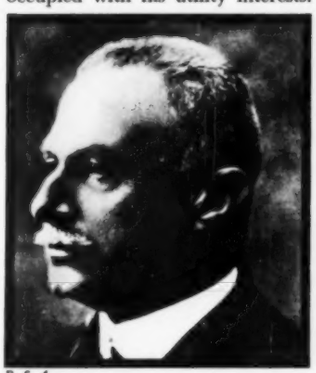
U. & U.

GIOVANNI AGNELLI (right) has been termed the "Ford of Italy," although his production would represent almost a shutdown for the Ford of America. But Senator Agnelli's Fiats are Italy's leading automobile, 30,000 Italians labor in his 12 factories, and he builds nearly 50,000 cars a year. It was at one time rumored that General Motors was going to acquire the Fiat works, but that Fascist nationalism prevented this invasion of American capital.

From a Portrait by Catorati

Portrait by Zuloaga © Keystone

GIUSEPPE VOLPI DI MISURATA (left) supplies most of Venice with its electric light and power. For services as peace-treaty plenipotentiary he became Count Volpi; later became Governor of Tripoli, which he supplied with railroads and turbines. A town in Tripoli—Vulpia—is christened for him. In 1925 he became Italy's Minister of Finance and put the lira back on a gold basis. Count Volpi left the Cabinet in 1928, and is at present occupied with his utility interests.



P. & A.

RICCARDO GUALINO (left), president of the Snia Viscosa of Turin, is one of the world's largest producers of artificial silk. Man's recently discovered ability to make a silky fabric without the silkworm's help has contributed to many large fortunes, including those of the Courtaulds in England, the Gillets in France, the du Ponts in America, and the Gualinos in Italy. Aside from his textile business, Sigñor Gualino owns the finest private art collection in Italy. His art gallery, like Andrew Mellon's, is not only an esthetic treasure but represents also a substantial investment, the value of which is certain to appreciate with time.

Keystone

IVAR KREUGER (above) has made millions of dollars from a product so apparently insignificant that it is given away in tremendous quantities. The product is the match, and of every four matches struck each day throughout the world, three have proceeded from Mr. Kreuger's Swedish Match Company and its 225 subsidiaries. A more imaginative match man might be overpowered at the thought of his billions upon billions of little fire sticks spurting into flame all over the world, but Mr. Kreuger is a hard-headed and unromantic Swede who does not even carry matches himself.

Many of Mr. Kreuger's early years were spent in America, where he helped build the Flatiron Building, Macy's, and the Plaza and St. Regis hotels. In 1913 he entered the match business (via his father's not very large or successful match factory) and soon merged several small match-makers into one group. Then he merged the merger with Sweden's big match company (Jönköping-Vulcan), thus creating a virtual monopoly of Swedish matches.

Monopolies, indeed, have been Mr. Kreuger's specialty. In many countries of Europe and South America, the distribution of matches is a monopoly of the government. Mr. Kreuger loaned money to Poland, Peru, Greece, Ecuador, Hungary, Esthonia, Jugoslavia, Rumania, and Latvia, and to all these countries he now supplies the official matches. In 1927 he loaned France $75,000,000, got the match concession for 20 years. One of Mr. Kreuger's customers is an African chieftain, whose black face appears upon every match box that Mr. Kreuger sends to him.

Mr. Kreuger has a motor boat, three yachts, one island, and apartments in Stockholm, New York, Paris, and Berlin. He is a bachelor with few social interests; photographers do not snap him at Deauville or Biarritz. Over the door of his office is a carved torch. It represents almost the only gesture that Mr. Kreuger has made.

XUM

India, China, and Tibet

© Keystone

AGA MOHAMMED (above), Sultan, Shah, and Khan, is the spiritual head of some 68,000,000 Moslem Indians, or about one-third the population of British India. But he also golfs, tangoes, plays tennis and roulette, and owns an extensive racing stable. In December the Aga Khan married Mlle Jane Andrée Carron, a Parisian dressmaker, the marriage representing a union of a Roman Catholic and a man who is virtually the Mohammedan Pope.

Although the Aga Khan spends most of his time in Europe, he retains a tremendous influence in India, as he is a direct descendant (in the forty-eighth generation) of the first Mohammed, founder of Islam. His descent is through Ali, who married Fatima, daughter of the Prophet. So holy is the Aga Khan that the water in which he has bathed is also holy, and is preserved and sold to the Faithful. Each year Mohammedan priests gather at Aga Hall (the Aga Khan's Bombay residence), and there the bathing and selling of the water is ceremoniously performed. For the water, the Aga Khan is paid literally his weight in gold. As he weighs about 220 pounds and as gold is worth about $20 a troy ounce, his weight nets him about $52,800. A London expert once valued his rubies at £50,000,000, whereupon the Aga Khan, somewhat ruffled, replied that he had been offered £100,000,000 for them. At the outbreak of the World War, he urged Mohammedans to remain faithful to the Crown.

Keystone

THE NIZAM OF HYDERABAD (above) is the ruler of the most populous Indian state, having the power of life and death over some 13,000,000 subjects. Inasmuch as he owns the Hyderabad mint, railways, post office, and army, can impose and collect all import and export duties, has about 5,000,000 acres in crown lands and collects tribute on most of the remaining real estate in his jurisdiction, his reputation as multibillionaire is perhaps not exaggerated. A miserly Midas, he keeps much of his wealth in the traditional form of bags of gold, each bag containing 2,000 rupees (about $665). This treasure is stored in a fireproof vault, guarded by several thousand troops. As is customary in many oriental principalities, a holiday is declared whenever a royal child is born. During one year, this happy occasion is said to have been celebrated no less than 300 times.

U. & U.

SIR JOSEPH LO PA HONG (above) is reputedly China's richest man, is certainly China's most famous Catholic. The Catholic Church began its missionary activities in China several centuries ago and has now several million Chinese communicants. Lo Pa Hong attended the 1926 Chicago Eucharistic Convention, is a Papal Knight, and head of the Chinese United Catholic Association in Peiping. He has baptized 7,000 children.

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THE DALAI LAMA (above) and the PANSHEN LAMA (right) are the two heads of the Buddhist religion, both being considered reincarnations of Buddha himself. The Dalai Lama, reigning at Lhasa, Tibet, is probably the richer of the two, as Buddhists throughout Tibet, Mongolia, and China have for centuries been sending him precious stones, silks, and other costly gifts, and none of this accumulated treasure hoard has ever been touched. The Panshen Lama (with whom the Dalai Lama is not on good terms) has been for some years wandering about China, sacred in his person but vague in his authority. In December he dined with Governor-General Chang Hsueh-liang at Mukden. Among the beverages served at the banquet was hot tiger's blood.

Keystone

MAHARAJAH SIR SAYAJI RAO GAEKWAR SENA KHAS KHEL SHAMSHER BAHADUR OF BARODA (above) unlike many an oriental potentate, has thought long and frequently of his people, laboring steadily to improve their education and their agriculture. To the Western mind, however, which insists that its Easterners must be Asiatic, the Gaekwar is perhaps most notable for his treasure of precious stones. He has a cloak woven of pearls and inlaid with diamonds, rubies, and emeralds. Originally intended as a covering for the tomb of Mohammed, its stones have been appraised at $5,000,000. The Gaekwar has also a $100,000 diamond cap and $60,000 gloves. His diamond collection includes the Brazilian Star of the South ($400,000), and his palace is guarded by cannons of solid gold.

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South America and Canada

Wide World

IT MAY BE SAID of Brazil that most of its industries (except coffee growing) were founded by COUNT FRANCISCO MATARAZZO (above). His was the first factory of canned lard; he created Brazil's flour industry, its oil industry, brought new life to its fabric industries. Today his family are manufacturers, bankers, shipowners, importers and exporters. They own rice mills, starch mills, flour mills, rayon factories, alcohol distilleries, nail factories, lithographic print factories, sugar mills and plantations, motion picture companies, perfumery factories, railroads, ships. Born in Italy in 1854, emigrating when he was a youth, Count Matarazzo is today Brazil's most representative industrialist. Sometimes to amuse himself and to reassure himself of his financial power, he agitates, then calms the produce exchanges. He is still the active head of the wide flung Industrias Matarazzo.

Not to be overlooked in Brazil are the Guinle family, whose wealth comes largely from public utilities. Carlos is the best known, blonder than most of his countrymen, owner of the first Isotta-Fraschini that sped along Brazilian roads, and famed as a lover of sports.

ARGENTINE wealth is always a complicated family affair. Signal among wealthy families are the TORNQUISTS (bankers), of whom the bespectacled, sport-loving CARLOS ALFREDO (below, with wife) is the head. Ranking with the Tornquists are the Devotos, who are of Italian extraction, the Basabildasos, the Basualdos, who have been hosts to the Prince of Wales, and the Martinez de Hoz, less rich but always prominent because of unassailable social position. But no matter who the Argentinian may be, he will surely read *La Prensa*, South America's and Buenos Aires' leading newspaper, published by EZEQUIEL PAZ (right). *La Prensa* has a circulation of 325,000 (400,000 on Sundays) and runs from 36 to 72 pages an edition. Politically it is grimly independent. It was the only South American paper to receive by cable the full text of the Einstein theory, the original Dawes report, the Coolidge Tacna-Arica ruling. Among its institutional services are a free medical clinic, a free library, a music school, and free legal consultation.

International

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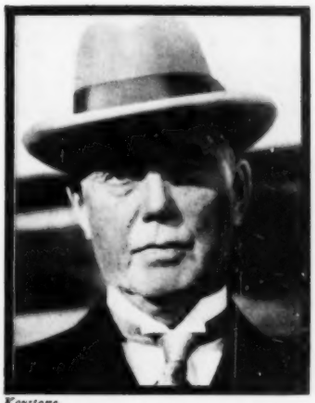


Keystone

A NOTED CANADIAN is Lady Eaton, widow of Sir John Eaton, whose father founded Canada's huge chain of Eaton mail order stores. Another is Sir Frederick Williams-Taylor, with his pride of ancestry, and Patrick Burns, the packer, befriender of musicians (one singer called herself Burnada in his honor) and friend of the Prince of Wales. There is the brilliant, cynical Izaak Walton Killam, publisher of the *Mail & Empire*, and Sir Joseph Flavelle, president of the National Trust Co. and chairman of the board of the Canadian Bank of Commerce. But of all Canadians, SIR HERBERT HOLT (above), friend of the late Capt. Alfred Loewenstein, is probably the wealthiest, certainly the most colorful. He is banker and public utility man and is active in the affairs of more than 140 companies. Aside from his work, to which he devotes 14 hours a day, he has few interests, though hospitals and educational institutions have known his generosity. He is hot-tempered and physically powerful, two qualities which, in conjunction, are sometimes dangerous. It is, perhaps, because of this that reporters do not like to interview him. He is apt to throw them downstairs.

Wide World

BECAUSE OF ITS COSTLY communications service, little is known by the rest of the world about Venezuela. But much of that little centers about JUAN VICENTE GOMEZ (left), for 20 years, under various titles, the country's dictator. But nowadays he dictates only from practice; his all absorbing interest is crossbreeding cattle in the hope of finding for Venezuela the most perfect cow. His wealth has been estimated at $100,000,000.

Some 30 years ago, SIMON I. PATIÑO (right), a bill collector, found himself unable to collect $250 from a debtor, accepted certain mountain lands instead. His employer discharged him after making him pay $250 and Mr. Patiño, disconsolate and impoverished, went to his mountains and looked at them. Having looked, he dug, and having dug, he found tin. Thus was founded Patiño Mines and Enterprises Consolidated and established Bolivia's greatest fortune, estimated at $150,000,000. Today Mr. Patiño gives less thought to tin than he does to his diplomatic duties in Paris.

Wide World

XUM

Aluminum Company of America

A corporation which paternally includes an industry; whose best customers are also its chief competitors.

THE story of steel cannot be written in terms of the United States Steel Corporation. The story of copper contains many chapters not related to Kennecott or Anaconda. But the story of aluminum in this country is solely the story of the Aluminum Company of America. With trifling exceptions, every pound of virgin aluminum produced in the United States has been, and is being, produced by the Aluminum Company. Every use of aluminum has been pioneered and popularized by this same corporation, and in its laboratories have been developed the strong alloys, so vital to aluminum's present and future. American industry now uses aluminum to the extent of more than 350,000,000 pounds a year. For the progress and the performance of this new metal, industry has unquestionably the Aluminum Company to thank.

Yet criticism, rather than gratitude, has been the Aluminum Company's usual lot. It is commonly regarded as a monopoly, and therefore bad; and as a Mellon monopoly, and therefore worse. Radicals, alarmists, and political opponents, scenting an obscure but invidious connection between Mr. Mellon's public position and private interests, convey the impression that the nation's minor currency may be at any moment aluminized, with Mr. Mellon's aristocratic countenance emblazoned on every nickel and dime. No sooner is aluminum mentioned than the conversation turns to monopolies in general, to the Aluminum Trust in particular, and how this ogre is taking at least the aluminum bread pans out of the people's mouths.

Photographs by Margaret Bourke-White

TAMPING DOWN SAND IN A SAND MOULD FROM WHICH WILL COME AN ALUMINUM CRANK CASE

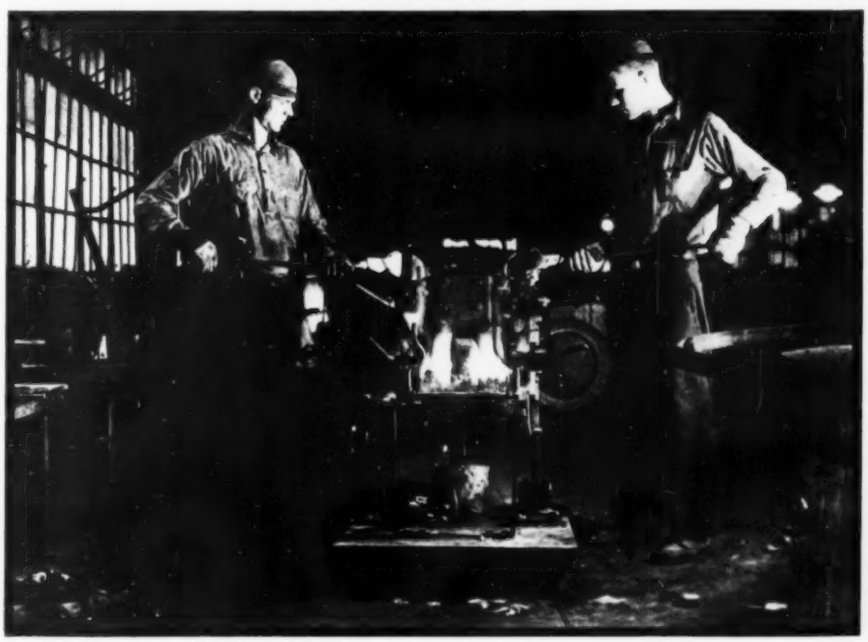
Like all prejudices, the prejudice against the Aluminum Company represents a fact exaggerated and a truth distorted. But it is also obvious that no such feeling can exist entirely without foundation. The Aluminum Company is admittedly the sole producer of aluminum in this country. Its position as sole producer was guaranteed, between 1888 and 1909, by a patent monopoly on the basic process of reducing aluminum from its ore. The Mellon interest dates from 1890, when the Mellon family exchanged cash for Aluminum Company stock. Andrew Mellon has no position with the company now, but R. B. Mellon (Mellon National Bank, Pittsburgh) and Richard K. Mellon are directors, and the Mellon family is a large (yet a minority) holder of Aluminum Company stock. The corporation's position as a monopoly is qualified by competition with a continuous stream of imported aluminum and by the large and growing supply of aluminum recovered from aluminum scrap. Its status as a Mellon monopoly is rather more than qualified by the Mellons' interest not reaching even an operating control. Yet the Aluminum Company undeniably dominates the aluminum industry, and with its progress and profits the Mellons are unquestionably concerned.

Furthermore, the Aluminum Company directs a thoroughly integrated business. The reduction of aluminum ore constitutes only a fraction of its activities. It makes and sells such products as aluminum cable, furniture, kitchen utensils, foil, and powder for paint. It makes and sells in semifinished form such products as propellers, pistons, and various other machine parts. There is nothing original about a producer being also a fabricator and merchandiser. But the Aluminum Company's position as chief source of aluminum does create the rather peculiar situation in which the company's best customers are also its most active competitors.

Consider, for example, the position of the General Fireproofing Company of Youngstown, Ohio, which makes, among other products, aluminum furniture. General Fireproofing's aluminum furniture is, of course, in direct competition with the Aluminum Company's own aluminum furniture. Yet General Fireproofing makes a profitable practice of buying its aluminum from the Aluminum Company and, except for the scrap market and importations, has no other source of supply. If the Aluminum Company regarded competition as an evil to be eliminated, it might put General Fireproofing in an extremely awkward position. And it is generally true that any manufacturer of aluminum products will find himself in active competition with his major source of material. "Aha!" cry antimonopolists. "Behold an entire industry in one clutching corporate hand!"

To this integration complaint, the Aluminum Company has, of course, an obvious answer. Competition, says the Aluminum Company, is something to be encouraged, to be fostered. Whenever an aluminum chair or piston or skillet, regardless of who made it, is sold, the Aluminum Company observes an increase in the market for its aluminum and a forward step in aluminum's progress. At least one Aluminum Company competitor—Bohn Aluminum and Brass Corporation—sells nearly as much of its aluminum product (Bohnalite pistons) as the Aluminum Company sells of its corresponding

LADLING MOLTEN ALUMINUM



THIS ALUMINUM WILL BE PART OF A VACUUM CLEANER

product (Lynite pistons). But no matter how often Bohnalite and Lynite salesmen clash, or how often Bohnalite salesmen make the sale, the Aluminum Company plans no dark methods of putting Mr. Bohn out of business. Mr. Bohn is a good customer. Mr. Bohn helps to sell the automobile industry on the merits of aluminum. The Aluminum Company has been accused of filling orders from its subsidiaries and holding up supplies of its competitor-customers. It follows, however, precisely the opposite procedure, on the theory that the production and promotion of aluminum is its main objective, to which the sale of aluminum products is incidental. To use its position as sole producer in order to become sole manufacturer and distributor would seem to the company like biting off its face to please its nose.

Birthday of a monopoly

Thus the aluminum controversy revolves chiefly about the Aluminum Company's power as a source from which most aluminum flows. The Aluminum Company maintains that only as sole producer could it have developed aluminum, in a forty year period, from a laboratory curiosity to an industrial staple. Detractors maintain that all monopolies are evil and that it is inimical to any industry to have its operations so largely overshadowed by one corporate entity. To determine something of truth's elusive position between these two extremes, it is necessary to consider aluminum's past, to go back to the day when the Aluminum Company (which was as much, indeed more, of a monopoly on the day of its birth than it is at present) was considered not at all a menace and probably a good deal of a curiosity.

For certainly in 1888 the newly formed Pittsburgh Reduction Company (the present name resulted from a reincorporation in 1907) represented an intensely speculative enterprise. From 1855 to 1888 aluminum, produced in minute quantities, had sold at an average prohibitive price of sixteen dollars a pound. Typical fabricated aluminum products were a helmet of a king of Denmark, the rattle for an infant prince of France, and the shiny cap on the Washington Monument. There was no dearth of aluminum in the earth's crust (it is fifth commonest of metals) but it clung so tenaciously to its compounds that the extraction of pure aluminum was a chemical, not an industrial, process.

In 1886, however, Charles Martin Hall had discovered a method by which aluminum could be commercially produced. A common compound of aluminum is aluminum oxide, found in a dirty yellow-brown mineral called bauxite. Mr. Hall, working in a homemade laboratory (the woodshed of his father's home at Oberlin, Ohio), separated the oxide from the bauxite, added cryolite, a fluoride of aluminum, and applied an electric current. The oxide resisted the passage of the current, turned the electrical energy into heat, and eventually broke down into its aluminum and oxygen constituents. Thus, with what must have been an extremely rudimentary electric furnace, Mr. Hall solved the problem of commercial aluminum production and laid the foundation of his later fame and

fortune. Both, as might be expected, were considerable.

When, in 1887 and early 1888, Mr. Hall failed to finance his pending patents for the electrolytic production of aluminum in Lockport, New York, he was introduced, through his friend, Mr. Romaine C. Cole, to Captain Alfred E. Hunt, then identified with the steel interests of Pittsburgh, Pennsylvania, and an owner in the Pittsburgh Testing Laboratory, metallurgical testing engineers. Captain Hunt interested a few of his business associates, and a company was incorporated under the laws of Pennsylvania, with a capital of 200 shares of $100 par value, to try out these patents on a practical scale. The first meeting of the subscribers to the stock of this company was held on August 8, 1888, and the name adopted was the Pittsburgh Reduction Company. The organization meeting, held on October first, elected officers with Captain Hunt as president; Mr. Horace W. Lash, first vice president; Mr. Robert J. Scott, second vice president; Mr. George W. Clapp (also an owner in the Pittsburgh Testing Laboratory), treasurer; and Mr. W. S. Sample, secretary. These gentlemen, with Mr. Millard Hunsiker, were the first board of directors.

Early mechanics

It was agreed between this board and Messrs. Hall and Cole that if the patents could be successfully worked the company would increase its stock to 10,000 shares, of which 57 per cent would be given for the patents, 15 per cent to the original subscribers, and 28 per cent would be held in the treasury for plant enlargement. Mr. Cole was made the first general manager, and Mr. Hall was appointed electrician. A plant site was rented on Smallman Street, Pittsburgh, between 32nd and 33rd Streets, and equipment purchased consisting of two 60 horsepower boilers and a 125 horsepower engine, with two 25 volt 1200 ampere generators from the (then) Westinghouse Electric Light Company. The list of the company's present plants is impressive: Badin, N. C., pig aluminum (from alumina), ingot; Buffalo, N. Y., sand castings, furniture, shingles, and roofing materials; Cleveland, O., sand castings, permanent mould castings, (Lynite pistons, etc.), die castings; forgings (Lynite connecting rods, etc.); Detroit, Mich., sand castings, moulding; Edgewater, N. J., sheet, screws, bolts, etc., rivets, file guides, collapsible tubes; Fairfield, Conn., sand castings; Garwood, N. J., die castings; Massena, N. Y., pig aluminum (from alumina), ingot, wire, cable, beams for structural use, bar, and rod; New Kensington, Pa., ingot, sheet, tubing, cooking utensils (Wear-Ever), foil; bottle caps (Goldy Seals, Alco caps, R-O Seals), bronze powder (Albron), moulding, Mason jar caps, special equipment (tanks, coils, etc.); Niagara Falls, N. Y., pig aluminum (from alumina), ingot, sheet, planographic plates; Alcoa, Tenn., reduction plant, rolling mills.

Due to the illness of Mr. Cole, his position as general manager was soon abolished, and Mr. Hall was made superintendent, with Mr. Arthur V. Davis (later president and now chairman of the board), then an employee of the Pittsburgh Testing Laboratory, assistant superintendent.

The first metal was made on Thanksgiving Day, 1888, and for the rest of the year, and well into 1889, production and sales alternated in importance with a constant need for additional capital for enlargement. The taking out of foreign patents and their protection, together with domestic patent litigation, occupied the time of the executives and directors of the company to a large extent so that comprehensive financing was impossible.

FORGE HAMMERS POUND DOWN ON AN ALUMINUM PROPELLER

FOOD FOR MANY A SAILOR IS COOKED IN ALUMINUM KETTLES

Mr. Mellon's mortgage

On September 19, 1889, the capital stock was increased to 10,000 shares and subscriptions to 2,250 shares invited. Additional capital gradually became interested. Mr. D. L. Gillespie, Thomas L. Shields, E. M. Ferguson, and T. Chalmers Darsie, well-known Pittsburgh business men, were elected to the board, and finally on January 28, 1891, Mr. A. W. Mellon took sufficient interest in the company to finance a mortgage on their new plant at New Kensington, Pa., and to join the board. Shortly after, Mr. R. B. Mellon became identified with the company and, after the death of Captain Hunt, was its president. The settlement of the patent litigation with the Cowles Electric Smelting and Aluminum Company by decision in favor of Hall and the starting of the first plant using water power at Niagara Falls put the company well on the way to finally successful operation.

The early prospects of the Pittsburgh Reduction Company could not be considered bright. For although these were the only men who could produce aluminum, they were also the only men who had any use for it. Solemn indeed was the moment when the partners put their first week's production (100 pounds) in the safe and wondered what to do with it. Nobody wanted aluminum. It had, to be sure, certain advantages. It was light—only one-third the weight of steel and less than one-third the weight of copper. It was noncorrosive—air and rain could not reduce it to a mass of rust. It was a good conductor of heat and a fair conductor of electricity. On the other hand, it was still extremely expensive. The first selling price was five dollars per pound for 96 per cent pure, and four dollars per pound for 88 per cent to 96 per cent pure metal. The price was rapidly reduced to fifty-five cents a pound, and at present is about twenty-five cents. A comparison between eighteen-cent copper and four-cent steel illustrated the greater first cost of any aluminum product, although of course a pound of aluminum has about three times the volume of a pound of steel. Furthermore, aluminum itself was suspect and unknown. The pure metal was soft; its early alloys experimental and uncertain. Nothing could be done with aluminum that could not be done with steel or copper or even wood. Aluminum was competing with long established materials that sold for a fraction of aluminum's price and that had a thoroughly standardized metallurgical and fabricating technique. The problem of producing aluminum was solved. The problem of selling it had only begun.

Collar buttons and dog collars

The Aluminum Company was therefore forced into the fabricating field. The manufacturers of copper cable saw no sense in buying aluminum to make aluminum cable. The manufacturers of tin pots and pans were equally reluctant to shift over to aluminum. Therefore, the Aluminum Company manufactured its own cables, its own kitchen utensils, and sold them to an uninterested and incredulous world. Nor was this necessity for pioneering a necessity only in aluminum's younger days. Within recent years, for example, the Aluminum Company designed, introduced, and popularized aluminum furniture. It is fair to say that in every major use of aluminum, the Aluminum Company has been compelled to demonstrate the practical possibility of using aluminum by actually making and selling the aluminum product itself. In many of its fabricating and selling activities it has encouraged other manufacturers to follow in its footsteps. In some (such as cable) it has not. Yet its early integration was necessary to its existence, and nearly every manufacturer of aluminum products today is traveling along a pathway which the Aluminum Company first explored.

A GIANT KETTLE FOR SOME CHEMICAL LABORATORY'S BREW

Early uses of aluminum included chiefly kitchen utensils, cables, machine parts, and novelties. These last are not now so important, but they were extremely vital in the critical early period. The novelty manufacturer, often operating on the proverbial shoestring basis, will take chances with a new material and is today nursing the young stainless steel industry through its infant stages just as he was one of the supports of aluminum's childhood. An aluminumware display of 1894 included collar buttons, looking-glass and picture frames, penholders, candlesticks, match boxes, house numbers, and spoons. Other later miscellaneous uses were aluminum fishing reels, helmet and cap badges, artificial limbs, thermometers, skate bodies, hypodermic syringe cases, phonograph recorders, dog collar trimmings, and horseshoes, while earnest but unsuccessful efforts were made to popularize aluminum musical instruments, glove fasteners, combs, hairpins, and cartridge cases. There is still a considerable aluminum novelty business—aluminum playing cards, for instance, being popular with yachtsmen and other out-of-door card-players, inasmuch as they prevent the distressing possibility of having a long, established suit blown into the bay by a passing breeze.

It was in the field of transportation that aluminum really began to take rank as a major metal. The bicycle rage of the nineties constituted aluminum's first transportation phase and is still an excellent illustration of its outstanding advantage—

[*Continued on page 134*]

BARON TAKUMA DAN, PRIME MINISTER OF THE MITSUI EMPIRE

House of Mitsui

Cynics maintain that the last able Mitsui died in 1694, but Baron Hachiroyemon is planting a million saplings as a prelude to the family's next millennium.

THERE is no business enterprise anywhere which is at once so vast and so diverse as the House of Mitsui in Japan. Its agencies abroad outnumber the embassies and consulates of the Empire. Deposits with the Mitsui Bank exceed the revenue from all the cities of Japan for 1929. In the constant safekeeping of the Mitsui lie one fifth of all goods warehoused in the Empire. A quarter of Japan's commerce, both import and export, is handled by the Mitsui Trading Company, and 40 per cent of her exports of coal. Under the firm's flag or charter are three and a quarter million tons of shipping—as large a tonnage as the whole mercantile marine of France.

The House of Mitsui is thus a merchant empire. It has been prosperous for thirteen hundred years and conspicuously rich for more than a quarter of a millennium—roughly since Shakespeare's time. Today the House is ruled by the Senior Baron Hachiroyemon, 14th Baron Mitsui. He does rather less work than the King of England. His prime minister of trade is Baron Takuma Dan, sometimes called the "Morgan of Japan."

Heaven's Son, and Earth's

An empire must have a capital. Clop, clop, clop, the common folk of Tokyo clatter cheerfully about on wooden sandals, dodge Yellow Cabs and creaking 'rickshas, cling to overcrowded trams, seem always happy and bustling, yet keep a corner of their hearts for reverence for the "Son of Heaven," the Sublime Emperor Hirohito, 124th descendant of the Sun Goddess. A romantic moat encircles the Imperial Estate in the very center of Tokyo. Surrounded by four million subjects, His Majesty dwells as remotely as though in the moon. But the Son of Heaven is not unconscious of another estate hard by, rising on an artificial hill a little to the south. Instead of a moat there is an equally effective rough stone wall, topped by sharp bamboo spikes. Here is the citadel of a clan whose members were once feudal men-at-arms, next and always traders, and finally the Barons Mitsui. Between them and the Son of Heaven is a link of peculiar strength. The Senior Baron Mitsui might be called the "Son of Earth."

Dai Nippon is the sounding Japanese ideogram for the "August Land of the Rising Sun." When the massive entrance gates of the Mitsui estate groan open, it is a long winding way among fragrant pines and placid lotus ponds to the *dai yashiki*, the "August Mansion" of the Senior Baron. Only personages who are *dai*—august in business, rank, or statecraft—ever pass the gates. But the Mitsui are hospitable if not democratic. For a guest of the consequence of the Prince of Wales or Thomas W. Lamont—and both have been their welcome guests—they string thousands of paper lanterns among the pine trees. As our hats, sticks, and overcoats are magically whisked out of sight by jerkily bowing second butlers, we advance into the Grand Salon, never suspecting that the magnificent Gobelin tapestries with which it is richly hung were woven, not in France, but by clever minions in Japan.

The Senior Baron enters, immensely to the manner born. Silk and sugar, coal and ships are less to him a business than a trust. He is 73, and yet he recently sanctioned huge expenditures to plant a million saplings in Korea. He knows that he will be dead long before they become valuable trees. But he must plant them as a prelude to the Family's next millennium.

Like all the Mitsui he is slender, with a high nose somewhat arched, and eyes the shape of falling raindrops, the upper eyelid especially arched. These traits are the stamp of the authentic Japanese aristocrat. They reveal a relatively pure descent from the Malay conquerors who first enslaved and finally mismated with the aboriginally white Japanese.

Dinner *chez les Mitsui*

The Senior Baron moves with cordial affability among his guests. At dinner he is the courteous and ceremonious host, pledging the health of each table companion before at length the banquet has come to its orderly end. English is spoken at his table, but not by the Senior Baron. Perhaps he has forgotten it (in his youth he studied engineering at greasy first hand in the mills of New Brunswick, N. J. and Lowell, Mass.); perhaps he never liked it. Softly and rhythmically the accents of French or Japanese fall upon the room; there are no bursts of laughter, no crescendos of argument *chez les Mitsui*. After dinner no guest would be surprised if the Senior Baron should display his latest water color painting or sing a classic war song of Old Japan.

Provinces of the Mitsui Empire

MITSUI GOMEI KAISHA (Mitsui Holding Company, the "Brain of the Family Empire")

Departments:

Secretariat	Accounts	Real Estate
Archives	Audits	Forests
Research	Supplies	Formosa (operating directly the Formosa Development and Tea-Manufacturing Co.)

The Peiping Representative

Affiliates:

SHIBAURA SEISAKUSHO (Shibaura Engineering Works, jointly owned with the International General Electric Company of America, the Mitsui having control)

HOKKAIDO TANKO KISEN KABUSHIKI KAISHA (Hokkaido Colliery & Steamship Co., Ltd., producing 10 per cent of Japan's coal and operating 15 steamers. Mitsui interests control 70 per cent of this company, which in turn controls the Nippon Seikosho)

NIPPON SEIKOSHO (Japan Steel Works, jointly owned with the Armstrong, Whiteworth, and Vickers interests of Great Britain. Capacity: 1,000,000 tons of steel per annum)

OJI SEISHI KABUSHIKI KAISHA (Oji Paper Manufacturing Co., Ltd. The first company incorporated in Japan [1872], and first to make foreign style paper. Dividend range since 1912: not less than 15 nor more than 50 per cent per annum)

NETTAI SANGYO KABUSHIKI KAISHA (Tropical Produce Co., Ltd. A Malaysian rubber-growing enterprise, owning several plantations, one of the largest covering 8,093 acres)

DAI NIPPON SERUROIDO KABUSHIKI KAISHA (Dai Nippon Celluloid Manufacturing Co., Ltd.)

I. MITSUI GINKO (The Mitsui Bank, Ltd.)

II. MITSUI BUSSAN KABUSHIKI KAISHA (the Mitsui Trading Company, the "Heart of the Empire of Mitsui," described on the stationery of their New York and London offices as "Mitsui & Co., Ltd.")

European Correspondents: (Formed as autonomous corporations to avoid the French and German "double taxation" of foreign firms)

SOCIETE ANONYME FRANÇAISE BUSSAN—Lyons and Paris

DEUTSCHE BUSSAN AKTIENGESELLSCHAFT—Hamburg and Berlin

Subsidiaries:

TOYO MENKA KABUSHIKI KAISHA (Oriental Cotton Trading Co., Ltd.)

TOYO RAYON KABUSHIKI KAISHA (Toyo Rayon Co., Ltd. A new Mitsui enterprise [1927] with a present plant capacity of eight metric tons of rayon thread daily)

TAIWAN SEITO KABUSHIKI KAISHA (Formosan Sugar Manufacturing Co., Ltd.)

NIPPON SEIFUN KABUSHIKI KAISHA (Nippon Flour Mills, Ltd.)

TAISHO KAIJO KASAI HOKEN KABUSHIKI KAISHA (Taisho Marine and Fire Insurance Co., Ltd.)

ONODA CEMENT KABUSHIKI KAISHA (Onoda Cement Co., Ltd.)

TOYOTA SHOKKI KABUSHIKI KAISHA (Toyota Loom Mfg. Co., Ltd.)

YUASA CHIKUDENKI KABUSHIKI KAISHA (Yuasa Storage Battery Co., Ltd.)

III. MITSUI KOZAN KABUSHIKI KAISHA (Mitsui Mining Company, Ltd.)

Subsidiary Mines: Innumerable

Substances mined: Coal, iron, copper, zinc, sulphur, silver, gold

IV. TOSHIN SOKO KABUSHIKI KAISHA (Toshin Warehouse Company, Ltd.)

V. MITSUI SHINTAKU KABUSHIKI KAISHA (Mitsui Trust Company, Ltd. A relatively new enterprise [founded 1924], but already the largest Japanese trust company with property and money held in trust amounting to yen 389,300,547. Count Kabayama, the company auditor, is one of Japan's delegates to the London naval conference)

VI. MITSUI SEIMEI HOKEN KABUSHIKI KAISHA (Mitsui Life Insurance Company, Ltd. Another new enterprise [1926], and still small, but policyholders already number 46,870)

Baron Dan turns gravely to the Senior Baroness. A daughter of the rich Viscount Mayeda, she typifies the Japanese ideal of beauty. Her face and her nose are long, mouth wide and straight, lips rather thick, and complexion fashionably pallid. It was a younger and less discreet lady of the Mitsui who confided in French to a banquet guest, "It is the best that the directors attend to all the business. That is well understood. The Baron could veto, but it is impossible that he would. He has never done that." Every Thursday afternoon, from two until four or six, Baron Dan confers with the directors, presides as chairman over the cabinet of the Mitsui empire.

Potent No. I

Policemen spread respectful Japanese grins and keep on grinning as the limousines of the directors thread their way through Tokyo's narrow Suruga-cho to the doorway of No. 1. The impressively low white marble building suggests 23 Wall Street, serves as a reminder that relations are increasingly close between the House of Mitsui and the House of Morgan. When their leanings were more toward Barclay & Company, Ltd., of London, the Mitsui of 1902 went in for their English red brick bank, which was shaken down by what Japanese gentlemen now call the "seismic fires" of 1923.

On a clear day Baron Dan can swivel 'round from his desk and behold the glorious, pinky-white cone of the Most Sacred Mountain, Fuji-san. (Only the commonalty call it Fujiyama.) The view is so excellent that the Mitsui have jealously held this site for nine generations. They used it for their 17th century Mitsui drapery store, and cleverly induced the greatest artists of the time to paint the store along with Fuji (see p. 80). The new Mitsui Building has just been completed by James

Courtesy George Marvin
THE SENIOR BARONESS MITSUI . . .

Courtesy George Marvin
TOKUTARO SAKAI, AN EPISCOPAL MINISTER, IS BARON DAN'S SPOKESMAN

Stewart & Co. of New York; architects, Trowbridge & Livingston. All concerned hope and believe that it is earthquake-proof. It houses primarily the Mitsui Bank and the highest executive offices of the Mitsui corporations (see chart).

Business–Religion–Business

A small business may prosper without a soul, but scarcely a great one, certainly not an empire of trade. Once American business was considered soulless, but that idea has begun to seem old-fashioned. The personalities of corporate empires like General Electric are increasingly felt, and before many years may be considered akin to soul. It is interesting to see how the Mitsui have steadfastly preserved this intangible quality through two and a half centuries of big business.

In the first place every son of the Mitsui, as he comes of age, proceeds to the Family Shrine and at the climax of a long impressive religious ceremony swears the following Family Oath:

In obeisance to the precepts of our Forefathers, and in order to strengthen the everlasting ancestral foundation of the families of our House, and to expand the enterprises bequeathed to us by our Forefathers, I here solemly vow in the presence of the August Spirits of our ancestors that as a member of the House of Mitsui, I will observe and follow the Constitution of our House, and that I will not wantonly seek to alter it. In witness whereof, I now take the oath and affix my signature thereto in the presence of the August Spirits of our ancestors.

There is no challenging the wisdom of the Mitsui Family Constitution. It dates from the 17th century, but has been revised and harmonized with modern conditions by the Family Council several times, most recently in 1900. Among its most important precepts are the following:

I. *The members of the House should deal with one another in close friendship and with kindness. Beware lest contentions among the kin will in the end ruin the entire House.* As is well known, the founder of the House of Rothschild laid a similar injunction upon his sons.

II. *In making marriage, incurring debts, or underwriting others' debts, act always according to the advice of the Council of the Family.* Regarding divorce the Council's advice is always the same. Not one is recorded in the annals of Mitsui.

III. *Unless one concentrates, one fails. Our House has its own enterprises which are ample to provide for any man's life. Never touch another business. The life work of a man lasts as long as he lives. Therefore, do not, without reason, seek the luxury and ease of retirement.* Of the hundreds of Mitsui menfolk, it is commonly said "they all work at something," many, of course, in subordinate positions under executives who are not members of the Family.

IV. *The essential of a business enterprise is to employ men of great abilities and take advantage of their special talents.* Cynics and detractors try to maintain that the last really able Mitsui was Takatoshi the Great, who died in 1694. If so, the family's success in always managing to employ "men of great abilities" is all the more remarkable. Among their greatest finds was Rizayemon Minomura, a 19th century predecessor of Baron Dan as prime minister of the Family.

One day the talented Rizayemon was called upon to reorganize the Shobundo concern, whose head had committed *harakiri*. Almost the only liquid asset seemed to be a tearful seventeen-year-old daughter of extraordinary beauty. What to do?

By introducing her to the Imperial Minister of Finance, whose mistress she saw fit to become, a lever was created. Scandal-tongued Tokyo says that by leaning on the lever, Rizayemon moved the Government to grant to the Mitsui

Courtesy George Marvin
. . . AND THE SENIOR BARON

THE MITSUI MAP OF TOKYO. HERE ARE SKETCHES OF THE CITY'S IMPERIAL AND INDUSTRIAL MAGNIFICENCE—THE PALACE, PRINCE CHICHIBU'S RESIDENCE, SHIBA PARK, AND THE CENTERS OF MITSUI CULTURE, CHARITY, AND ENTERPRISE. IN THE LOWER PART OF THE MAP CAN BE SEEN THE WIDE AND SHALLOW SUMIDA RIVER

Bank the right of issuing paper notes. What is certain is that the authorized *Brief History of the Mitsui Bank* describes Rizayemon as a reformer who extirpated "objectionable practices and usages that had crept into [the Mitsui] business and had been increasing with the growth of the establishment." He also built the gorgeous and garish Mitsui-Gumi House (see p. 77), a gem of architecture in the Victorian seventies.

V. *You have been born in the Land of Gods, worship your Gods, revere your lord, love your country, and do your duties as a citizen . . . If there be among you any evil doer, deal with him accordingly at the Council of the Family.* The Council of the Family is made up of representatives of the eleven constituent families which compose the House of Mitsui. It meets once a month in the Mitsui Bettei, a secluded villa on a small, detached estate in the Shiba ward of Tokyo. In the chair, the Senior Baron Hachiroyemon Mitsui, president of the Mitsui Gomei Kaisha (holding company). On his right, Mr. Genyemon Mitsui, 63, president of the Mitsui Ginko (bank). His hobby is classical script writing, and he has the best collection in Japan of antique Chinese script, enough to fill a museum. On the Senior Baron's left, Mr. Morinosuke Mitsui, hobby—fencing, president of Mitsui Bussan Kabushiki Kaisha (trading). Next to him, Mr. Gennosuke Mitsui, president of Mitsui Kozan Kabushiki Kaisha (mining), an adept at classical *no* dancing, who can whang his wooden sword with the best. Across the table, Baron Jutaro Mitsui, a water-colorist like the Senior Baron, and president of Toshin Soko Kabushiki Kaisha (warehouses). Hanging about in the offing may be young Benzo Mitsui, a member of the board of directors of Mitsui Bussan. He collects birds. His wife is the women's golf champion of Tokyo. A good many people used to like her parties when she lived in New Rochelle and he "did something" in the office of Mitsui Bussan at 65 Broadway.

The Morgan of Japan

All these gentlemen are august, but they follow the advice of Baron Dan. Probably the "Morgan of Japan" will be introduced to the distinguished guest by his spokesman-partner, Mr. Tokutaro Sakai, one of the directors of Mitsui Gomei Kaisha and president of the Harvard Club of Tokyo. This amazing personage is the Mitsui's foremost contact man with the Christian world. To prepare himself for the job he was not only graduated from Harvard but got himself duly ordained an Episcopal minister. In sonorous pulpit tones he presents "Dr. Takuma Dan."

The great doctor (of engineering) seems a gentle little man, slight and low-voiced. The Japanese have made affectionate, poetic sayings about his taciturnity. "He asks questions with his eyes," is one, and another, "He is as quiet as a wistful child." The face and hands might be those of a musician. He absolutely does not look like "Big Business." His salary is negligibly small, but in good years his bonus is a good half million yen ($250,000), which probably equals, in the Japanese luxuries it will buy, a million-dollar New York income.

The perspicacious Hon. Cyrus Woods, famous "Earthquake Ambassador" of the United States to Japan, says of Baron Dan: "He is a business giant, one of the really great men of his time. He thinks clearly and has the faculty of getting to the root of a matter quickly, brushing aside the immaterial chaff. I have never known him to attempt to fool either himself or anyone else. His sincerity and modesty are unequalled."

When the business giant was aged 13 he accompanied a Japanese mission to the United States. "Although of such tender age, he was the most prominent member of the party," writes a eulogist, "because his father was a great counselor to the Feudal Lord of Fukuoka. He diligently attended school and was soon graduated from the Massachusetts Institute of Technology. He then became a professor of engineering at the Imperial University of Tokyo."

Professor Dan got out of the classroom when the Government appointed him director of the newly formed Mining Bureau of Fukuoka, his father's bailiwick. When the Mitsui bought this entire mining district from the Government at one clip, Baron Dan naturally became chairman of the Mitsui Mining Company. About twenty years ago the then Mitsui prime minister, Baron Masuda, began to decline in health, and Baron Dan was chosen his successor by the Family

THE VICTORIAN ERA IN JAPAN. IN 1872, WHEN THE PRESENT SENIOR BARON WAS STARTING FOR AMERICA, THIS "FINEST COMMERCIAL STRUCTURE IN TOKYO," CALLED THE MITSUI-GUMI HOUSE, AROSE TO HOUSE THE MITSUI BANKING ENTERPRISE

Council. He was one of four Japanese to be raised to the peerage on the occasion of the present Emperor Hirohito's enthronement—a pluperfect honor.

"Business is more than business!"

In chatting with American business men, Baron Dan is fond of observing with gentle reproof: "So, so, business is business, yes. But business is *more* than business! Business is human." This may be another way of saying that the gentle doctor, by his broadly human and considerate dealings with the 80,000 Mitsui employees, has kept them working at top speed for more than a generation, during which time there has been only one strike. That was in 1923, was provoked by political agitators, and was amicably settled in less than three weeks. Baron Dan believes in hiring old-fangled professional story-tellers, and new-fangled motion picture men, who visit the Mitsui plants in regular succession, giving free shows. Company schools and company stores are a matter of course, like company doctors and company three-roomed cottages. Stopping just short of old age pensions, the Mitsui pay a very liberal retirement allowance to employees who quit them after 25 years or more of service. It is characteristic of the mild and cultured "Morgan of Japan" that he encouraged his son, Mr. Ino Dan, to spend most of his youth and manhood studying art in Italy, France, and Spain, and finally to lecture on art in the University of Tokyo.

Exchange of 90 per cent

The Mitsui Bussan Kabushiki Kaisha (trading company or Mitsui & Co., Ltd.) is the Family's most extensive enterprise. As the heart of the Mitsui empire, and almost of Japanese commerce, it ceaselessly pumps oceans of exports, sucks seas of imports. Thoroughly international, even cosmic, it can best be described in terms of its products:

Silk, whether for sheer stockings, sun-kissed scanties or tawny brown telephone cords, now comes to the United States almost exclusively from Japan. In raw silk the two nations are amazingly interdependent. They reel 90 per cent of all we buy, and we take 90 per cent of all they sell. The Mitsui have long had a shrewd hand in this.

It is less than 30 years since Europe was the only dependable producer of high grade raw silk in quantity. Probably Italy still reels the best. In Japan, sericulture was and remains an enterprise of small farmers, almost of individuals. Such people cling to antiquated methods. To improve quality, Mitsui Bussan set up several model reeling plants. Crusty old silk farmers were bamboozled into the best ways of feeding, soaking, and unwinding their worms. Discreet agents were sent to Italy. They managed, despite exciting difficulties, to come away with thousands of selected Italian silkworm eggs. These the Mitsui Bussan hatched, then put the bull worms figuratively at stud for the benefit of Japanese sericulture generally.

Seventy times as great as tea

Today raw silk is Japan's greatest export, 70 times as great as tea. It constitutes two fifths of the outgoing commerce of Dai Nippon, and of this Mitsui Bussan handles a quarter. Every bale they touch is graded and conditioned by experts of their silk department, mostly in Yokohama, elaborately equipped with cohesion machines, seriplanes, and serigraphs for the handling of every kind of silk fiber and silk cloth. As traders whose sharpness kept them out of farming, the Mitsui are reaping fabulous private profits out of fabulous public service.

100,000 devils

Cotton is a second keen interest of Mitsui Bussan. This time the problem was the stimulation of an import item. Still another department —machinery—was created. As agents for the British textile machinery firm of Platt Brothers and Co., Ltd., Mitsui Bussan has imported a large proportion of all cotton spindles now twirling in Japan. The first began to spin in 1863. Recollect that prior to 1853 the very concept of machinery in the occidental sense was unknown to Japanese. In that year two steam frigates and two sloops of war, commanded by Commodore Matthew Calbraith Perry, punctured the isolation of what had been the "Hermit Empire." Terrified Tokyo heard that a hundred devil-possessed "Black Ships" were belching infernal smoke in the Bay of Uraga, preparing to land a hundred thousand devils. A Mitsui who was something of a dilettant cartoonist went down to see for himself. He brought back a sketch still extant. It suggests that devilish Commodore Perry had a horizontal nose some five inches long like Mr. Mutt's.

Some schoolbooks to the contrary, Commodore Perry did not open the Japanese trade door, but found it very slightly ajar and swung it wide. Through the chink and by especial favor of the Shoguns, the Mitsui had long carried on a considerable commerce with China and with the Dutch, who had a precarious concession in Nagasaki. The fact that the Mitsui were already internationally minded helped them to leap to the fore in the commercial new day of Japan. Cotton spinning and weaving was one of the first manufacturing industries introduced. There were other pioneers, but the Mitsui were first with a big branch office in Bombay, which is still their bustling headquarters for the buying of Indian cotton. Raw cotton is now the greatest Japanese import, and cotton cloth the No. 2 export, second only to raw silk. In 1921 the cotton department of Mitsui Bussan reached such an enormous volume that it was separately incorporated as the Toyo Menka Kaisha (Oriental Cotton Trading Co., Ltd.) with headquarters in Osaka, chief cotton port of the Empire.

SURUGA-CHO, No. 1—NEW AND MODERN HEADQUARTERS OF ALL MITSUI ENTERPRISES

Billions of beans

Coal and Oil, Sugar, Cereals and Fertilizers, and *Lumber* are four more departments of the all pervasive Mitsui Bussan. An almost superstitious belief that mining is a risky business kept the Mitsui out of coal while they meditated on its possibilities for perhaps a century and a half. With gingerly misgivings they bought the immensely profitable Miike coal mine in 1888; and in 1930 they still observe with particular scrupulousness the festivals of the God of Mines.

The coal department of Mitsui Bussan handles 40 per cent of the Empire's output and acts as selling agent for the gargantuan Mitsui Kozan Kabushiki Kaisha (Mitsui Mining Company, Ltd.) which annually digs five million grimy tons, or about one sixth of the national production.

Petroleum is handled as a simple import by the coal and oil department, but in the realm of vegetable oil the cereal and fertilizer department have a bounding babe of their own complex begetting. They shipped the first Manchurian soy beans to Europe in 1907. Today the beans, bean oil, and bean cake are international staples. Everyone who has sailed past Port Arthur and into Dairen has seen the batteries of Mitsui bean oil tanks bulking houses high. Sacks of beans piled twenty deep stretch away illimitably along the quays, crisscrossed by railways.

On the sweet side Mitsui Bussan are the largest dealers in Java sugar, and also buy in large quantities from Cuba. The lumber department has been selling American softwoods in Japan for a generation, and rather plume themselves on their recent coup of introducing and popularizing hard Japanese oak in Europe.

War has always proved a good tonic for Mitsui Bussan. After a long swig of the Russo-Japanese fight brew, the company not only quadrupled its business but became so sanguine of future profits as to increase its capital one hundredfold, from yen 200,000 to yen 20,000,000 ($10,000,000). Most of the Great War was fought upside down on the other side of the globe from Japan. But it once more quadrupled the business of Mitsui Bussan, and the capital was promptly quintupled to its present figure of yen 100,000,000 ($50,000,000). This brings us to the *Shipping and Shipbuilding Department.*

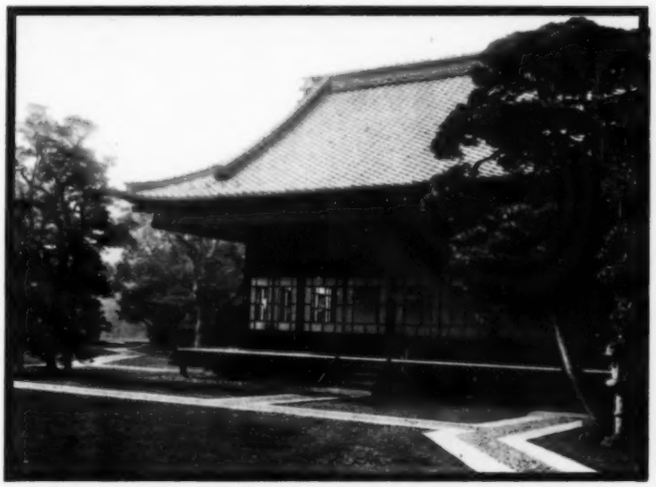
Submarines are good business

German submarines set the Mitsui to constructing ships. They have always owned many and chartered more; but in 1917 they let contracts for a shipyard at Tama, 64 miles west of Kobe, and in 1919 they began to build. To date they have launched 52 vessels aggregating 150,000 tons, mostly small but very profitable freighters. Their largest are the *Eastern Exporter* and the *Eastern Importer,* each of 15,000 tons.

THE GARDENS OF

The Mitsui neither operate nor charter *de luxe* passenger ships—do not own the famous Nippon Yusen Kaisha (Japan Mail Steamship line). They built the first motor ship launched in Japan, and make both ship and stationary Diesel engines under Burmeister & Wain license. They own and operate 223,000 tons of the bottoms in which their trade is carried, but charter the prodigious excess of 3,000,000 tons, and are believed to control the rates which can be charged for chartered shipping in Dai Nippon.

Conscious that there can be only a few more departments left, the august guest of the Mitsui may be eager to press on into *Metals and Metal Goods*, *Machinery* and *General Merchandise*. But if so he is rash. Iron, steel, copper, tin, zinc, the famous Bunker Hill lead, rails, structural steel, sheet steel and galvanized iron will give him a headache sooner or later. If he is indomitable, however, the machinery department will volunteer the claim that they were *first* to import into Japan airplanes, motor cars, rotary newspaper presses, cotton spinning and weaving machinery, sugar mill tandems, railway equipment, and radio apparatus. Scarcely anyone in the general merchandise department can recite a hundredth part of the items in which it deals. But representative are flax, hemp, jute, wool and woolens, rubber and rubbers, pulp, paper, Portland cement, canned goods, salt, tea, tobacco, and matches.



ONLY THE AUGUST ENTER THE SENIOR BARON'S DRAWING ROOM

Try and found a bank!

The joy and pride of the Mitsui themselves is their Ginko or bank. As purveyors of money to successive Governments and to the Son of Heaven their position in Japanese politics is formidable in the extreme. They remember and glory in their banking struggles. To start a bank in the Japan of 250 years ago was infinitely more difficult than to obtain a British peerage today. Even money changing was a monopoly of powerful groups close to the Shogun or Tycoon (literally "High Prince"), who then ruled Dai Nippon as autocratic vice regent for the Emperor, totally eclipsing the divine progeny of the Sun Goddess.

The Mitsui think of this as their time of transition. They were just turning from the profession of arms to business, and had begun with a successful brewery at Matsuzaka, a small, remote town in the province of Ise. It is a great moment when Takatoshi Mitsui, later "The Great," sets out for the capital of the omnipotent Tycoon and rashly aspires to found a bank.

He begins with a dry goods store, because the money monopolists grudgingly allow stores in good standing to have a small exchange department. This will be the opening wedge. With consummate genius Takatoshi Mitsui sets himself to build the biggest store in Tokyo, with much the biggest exchange department. "He was generations if not centuries ahead of his time," says a Mitsui of today with reverence. "He established the first 'Fixed-price, Spot Cash, No Credit' store in Japan, and possibly in the world. He sold cloth in any length desired, whereas others would sell only 'kimono lengths,' enough to make a garment for a large person but too much for most people. He introduced the name of the store into popular novels and plays. When it rained, he loaned his patrons oiled paper umbrellas boldly inscribed with our trademark."

Traders know the mark wherever there is trade. It consists of three short parallel lines placed horizontally inside a square which is standing on one of its points. This is simply the Japanese ideogram for Mitsui, which means "Three Wells." Like the cherry tree story of George Washington is the pretty fable that more than a millennium ago the treasure of a robber band was discovered in three wells by a Japanese farmer who was known ever after as "Mitsui."

Pure gentleman, like pine tree

Ten long years pass before the dry goods store of Takatoshi the Great is of such prominence that he is allowed to make over its exchange department into the first Mitsui Exchange House. Soon he has others. Before Takatoshi dies in 1694 he is one of the 12 financial agents of the Shogunate, one of the dozen biggest bankers in Japan. He lives today, like George Washington, in little children's schoolbooks, along with his wife, Ju-san. An authentic painting of husband and wife is reproduced in such a way that boy scholars have in their books only the picture of Takatoshi and the ideograms at his side:

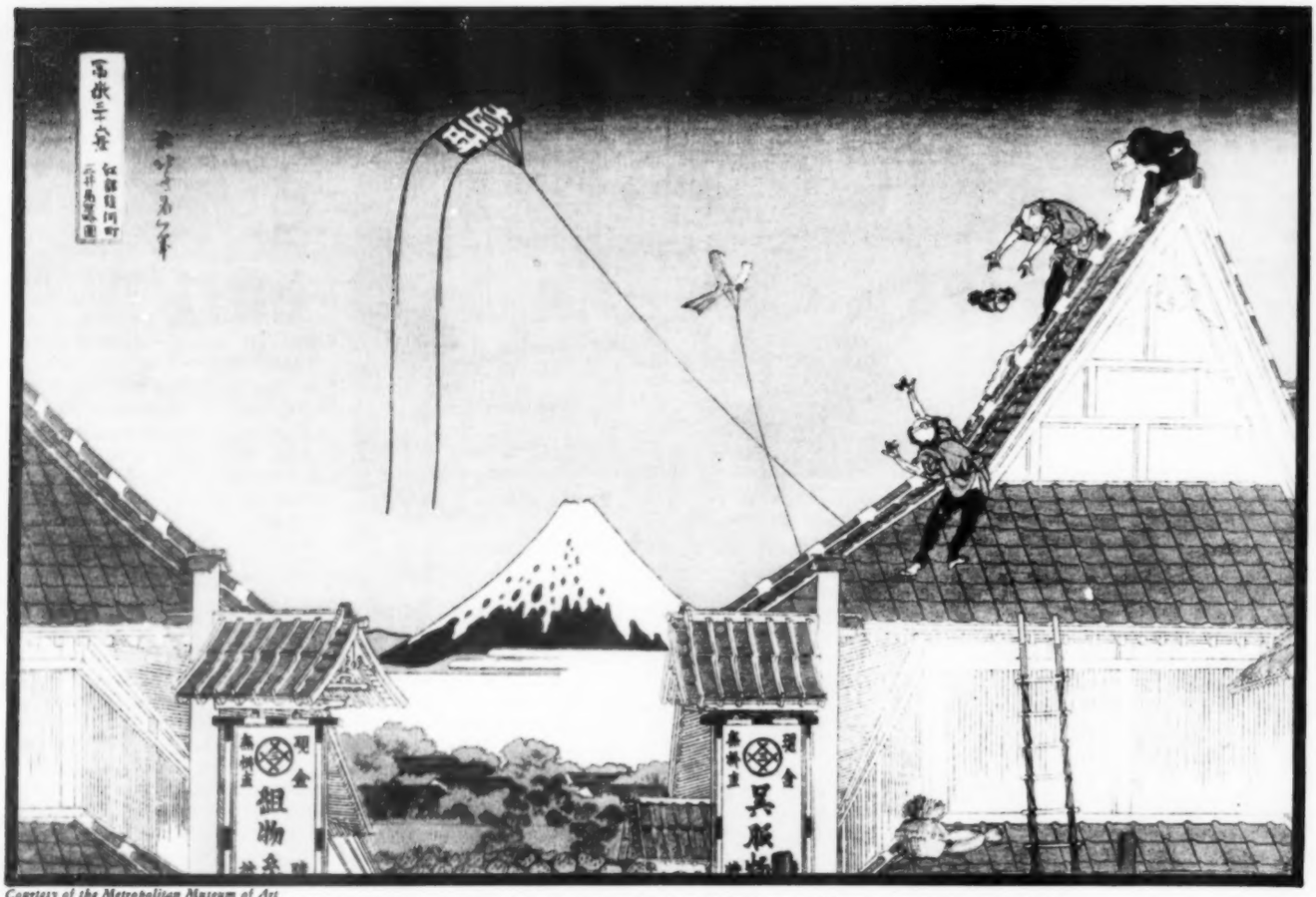
Deceased gentleman, pure and sincere like pine tree. His integrity will be admired forever. May his venerable spirit remain long with us.

Girl scholars have in their books only the gentle Ju-san and her ideograms:

Deceased lady, prosperous and glorious. Her virtues will be admired among our people forever.

The modern era of the Mitsui Bank is spanned by the lifetime of the present Senior Baron. The outstanding fact is that in 1867, when the Emperor Meiji emerged from the eclipse which had

THE SENIOR BARON



Courtesy of the Metropolitan Museum of Art

HOKUSAI (1760-1849) PAINTED THE MITSUI DRAPERY STORE WITH FUJI IN THE DISTANCE

darkened the Son of Heaven for 800 years and proceeded to resume his divine rule over Japan, the House of Mitsui instantly sided with the Imperial House, became their bankers, and played the leading financial rôle in suppressing the insurrections which followed the overthrow of the Shogunate and the ousting of the last Tycoon. In 1909 the Mitsui Bank was finally incorporated in its current form of a joint stock company, the Mitsui Ginko, with a present capitalization of yen 100,000,000 ($50,000,000). The most recent statement shows deposits of yen 644,421,820; loans and discounts yen 421,927,149; and profits for the half year ending June 30, 1929, yen 7,762,151.

How rich the Mitsui?

Several Japanese sources, all of which should be competent, estimate the aggregate wealth of the House of Mitsui all the way from half a billion to two billion yen—that is, from $250,000,000 to $1,000,000,000. In the most authoritative New York banking circles it is believed that the Family wealth does not exceed $500,000,000. The Senior Baron Mitsui paid income tax last year on $1,696,000. This was the second largest in Japan, the largest personal income tax being paid by Baron Iwasaki, retired head of the Mitsui's chief rival, the Mitsubishi interests. Baron Iwasaki's income was apparently $2,154,000. But the peculiar system under which the Mitsui Family Council takes a certain part of the profits of their companies and then doles it out to individual members "according to rank," as directed by the Family Constitution, makes income and profit statistics misleading.

The five richest families in Japan are generally taken to be Mitsui, Iwasaki (in business hours they call themselves Mitsubishi or "Three Diamonds"), Sumitomo, Yasuda, and Okura. Of these families only the Iwasaki rank with the Mitsui. They own the largest Japanese steamship line, the famous "N. Y. K." (Nippon Yusen Kaisha or Japan Mail Steamship line), and particularly excel at heavy manufacturing, in which they are associated with the Westinghouse Electric International Company of America. A rough but serviceable comparison of Mitsui v. Iwasaki may be had by considering capitalizations:

MITSUI

	Capital	*Paid up*
Holding Company	Yen 300,000,000	Yen Fully paid up
Bank	100,000,000	60,000,000
Trading Company	100,000,000	Fully paid up
Mining	100,000,000	62,500,000
Shipbuilding & Shipping	(Separate figures not available for these enterprises, departments under Gomei Kaisha.)	
Manufacturing		
Warehousing	Yen 15,000,000	Yen 11,500,000
Trust Company	30,000,000	7,500,000

IWASAKI or MITSUBISHI

	Capital	*Paid up*
Holding Company	Yen 120,000,000	Yen Fully paid up
Bank	100,000,000	62,500,000
Trading Company	15,000,000	Fully paid up
Mining	100,000,000	62,500,000
Shipbuilding & Shipping	50,000,000	30,000,000
Manufacturing	45,000,000	40,500,000
Warehousing	10,000,000	Fully paid up
Trust Company	30,000,000	7,500,000

Dai Nippon, great or poor?

These figures suggest that even the greatest Japanese enterprises, world-ramified though they may be, are not on a par of amassed gold value with the business empires of the West. When the Mitsui increased the capitalization of their trading company one hundredfold at a single bound, they had only $100,000 to start with and only $10,000,000 at the finish. All this is no diminutive of our premier assertion, that, in diversity and vastness, the Mitsui empire of business is without equal anywhere. One repeats that no other family has so long a reach or carries so much trade, but one adds that this is

Courtesy of the Boston Museum of Fine Arts

INTERIOR OF OLD MITSUI SHOP—BY OKUMURA MASANOBU

possible to Japanese on a gold outlay which seems disproportionately small by Western standards. A gentleman of Nippon with $1,000,000 in gold is in fact far richer than a mono-millionaire in New York. He can afford more servants, a finer town house, a much larger country estate, and, generally, a greater plenitude of all that appertains to wealth. Provide your Japanese workman with a few handfuls of rice a day, throw in two kimonos a year, and you have bestowed as much as though you furnished your American workman with his daily lamb chops and his annual Chevrolet.

Rate v. volume

Japan's astounding progress in all fields of commercial endeavor is astounding chiefly in relation to the incredibly backward age from which progress has been made in the 76 years since Commodore Perry flung wide the Empire's door. The *rate* of progress has been absolutely prodigious. The *volume* achieved is still sufficiently moderate to warrant the following flat statement: *There is no such thing as the Japanese Yellow Peril either in business or in sustained battle power, which nowadays is only in proportion to a nation's total economic strength.*

We have seen that Japan's greatest export industry is raw silk, scarcely an industrial product. Great though her strides in cotton spinning have been, she still has fewer spindles than North Carolina. Her pig iron output is less than half that of the minuscule independent Grand Duchy of Luxemburg. The iron ore *reserves* of Japan proper plus Korea are estimated at only 120,000,000 tons, or less than the *production* of the United States in 22 months. When it is considered that Japan is almost as poor in other minerals and coal as she is in iron ore, and that her prosperity really depends upon her exports of raw silk to the United States and cotton cloth to Asia, the position of Dai Nippon is seen to be far less formidable than that of any other Great Power. She can overcome her crippling scarcity of raw materials only by conquest, and yet she must keep on the friendly terms of a salesman with the very countries whose resources she covets most. Here is a vicious or perhaps a happy circle, which will not revolve.

Earharts or Edisons?

All else aside there are human and psychological factors which will long prevent Japanese from seriously threatening the industrial supremacy of the West. Miss Amelia Earhart has complained that in competition with male airplane pilots American women are enormously handicapped by the fact that their heredity and upbringing have been remote from mechanics. How much more remote than the American female is the Japanese male! Industrial Japan, like Miss Earhart, has soared to splendid achievements on hired wings and with a borrowed technique.

"It is no reflection upon the Japanese as a race to state that they are not good mechanics," observes Professor John E. Orchard of Columbia University. "In a little more than half a century they have been called upon to make a transition in mechanical knowledge and viewpoint that in England required several centuries . . . In over a hundred industrial establishments visited [by Professor Orchard in Japan] I failed to find a single important mechanical appliance of Japanese invention. There were Japanese machines, but upon close questioning I always discovered that the machine was a copy of one originating in England, the United States, Germany, or Sweden. I also discovered that the copies were almost without exception less efficient than the models from which they had been made. In Japan's leading industry, the reeling of raw silk, mechanical progress has been dependent upon the mechanical advances of the Italian industry."

XUM

Plastic Age

Outline of an industry which expects to rank with steel in two decades.

Reporter in wonderland

Months and months too soon, news leaked out about Zalmite, a substance named for Zalmon G. Simmons of Simmons Company. It became known that Simmons beds and Berkey & Gay (Simmons subsidiary) furniture would be made of it in 1930. If the curious wished to see Zalmite, they were referred to the Esmond Blanket Shop on Fifth Avenue, Manhattan. There a glittering bed, apparently of black Bakelite trimmed with nickel, designed by Norman Bel Geddes, could be seen. Besieged with questions, Zalmon Simmons gave few details and these facetiously. Of what was Zalmite actually made? "Peanut shells and burlap bags," said Zalmon Simmons. *Barron's* published the joke as fact. Scientists laughed at the credulous reporter.

The reporter should be excused. Combinations no less incongruous are a matter of course in the plastic industry. To explore the world of the plastics is like taking a stroll with Alice in Wonderland. The things of everyday life (cotton, paper, milk) keep turning up in the most unexpected forms.

Definition

Plastics are industrial materials of almost infinite possibilities. Formed by the combination of certain chemicals with each other and with organic materials, they are cast or molded into shape. More specifically, a plastic is a substance whose ingredients may include camphor, carbolic acid, soy beans, sour milk, cashew nut oil, oat hulls, ox blood, sawdust, cotton, or formaldehyde, and which is used to make fountain pens, movie films, buttons, rattles, table tops, lathes, automobile parts, beds, cigarette holders, insulators, and almost anything else.

The industry

Plastic prophets believe that their industry will be as important as steel in two decades. Already its products are indispensable to such major contrivances in this machine age as radios, airplanes, telephones, automobiles, and electric power lines. In 1914 a $14,000,000 industry, in 1928 a $219,000,000 industry is the record of plastic growth. Already the industry has its own magazine, *Plastics*, filled with pictures of strange machines and stranger products.

Divisions

Considered from the standpoint of ingredients and processes, the most important plastics fall into three groups: the pyroxylin plastics (as celluloid), the caseins (as Karolith), and the synthetic resins (as Bakelite).

Oldest plastic

Though it is a trade name registered by one company, celluloid has long been a household word for pyroxylin plastics. The 62-year-old pyroxylins, important as they are, have not the unexplored possibilities of the newer plastics. And their close relationship to gunpowder, of which the Cleveland hospital disaster was a gruesome witness, is a serious drawback.

Ingredients.—Theoretically, any plant fiber (cornstalks, wood, cotton, etc.) with cellular structure for the base; in practice, cotton is used. To this cotton, treated with nitric acid and sulphuric acid, camphor is added, under heat and pressure.

History.—Blending camphor and nitrocellulose (guncotton), John Wesley Hyatt in 1868 produced a substance which his erudite brother called "celluloid." Billiard balls and dental plates were the humble uses to which the Hyatts first put their new material. After celluloid had become established, John W. Hyatt retired from the company to develop new inventions, among them his famous roller bearings. But his company went on to become the important Celluloid Corporation, recently taken over by the Celanese Corporation of America.

Virtues.—Pyroxylin's three outstanding qualities are thermoplasticity (can be molded under heat), transparency, and great elasticity.

Products.—Most important is camera film ($43,000,000 out of an annual $60,000,000). Also used in toilet articles, nonshatterable glass, rattles, trinkets, and (in rural districts) collars.

Makers.—The Eastman Kodak Company (film); the Celluloid Corporation (its other important plastic, Lumarith, is less inflammable, more expensive than pyroxylins); Fiberloid Corporation; du Pont Viscoloid Company.

Sour milk plastic

This is the most frivolous of the plastics. Of it are made many small articles, colorfully streaked and mottled, but no camera film and no machine gears. If Architect Buckminster Fuller of Chicago builds his house of casein plastic, as he would like to, the results might be inconvenient. If he dropped a match on the floor, the charred plastic would smell like a blacksmith shop. And if it rained, his house would grow flabby, wobble, and gently collapse. Far better might casein plastic keep to buttons, while Architect Fuller use synthetic resin.

Ingredients.—The action of formaldehyde on casein forms this plastic. Casein is a protein substance derived mostly from sour milk, but in Japan from the soy bean. Most of it is imported (90 per cent from the Argentine), and 75 per cent of it is used in the paper industry, either for wall paper or for coated book papers. Its next greatest use is for plastics. Miscellaneous uses of casein include glue, varnishes, massage creams, and shoe polish.

History.—About 1890 a German chemist, Adolf Spitteler, was asked to devise a white blackboard. Working with casein and formaldehyde, he achieved something much more important: a tough, hornlike substance, which his firm promptly patented. Up to 1914 the resulting Internationale Galalith (Greek for "milkstone") Gesellschaft Hoff was the only maker of casein plastics in the world. The War broke up the monopoly.

Virtues.—Noninflammable, transparent (if desired), not brittle, can be molded by heating, not affected by oils, can be etched by acids.

Products.—Chiefly buttons, umbrella handles, toilet sets, chessmen, fountain pens, picture frames, cigarette holders, and other small articles.

Makers.—The Aladdinite Company (President P. C. Christensen, former Edison assistant, who devised the first American process in 1919), the Karolith Corporation (affiliated with Bakelite Corporation), Erinoid Company of America (affiliated with Borden Company).

Most plastic plastic

The synthetic resins (Bakelite, Durez) are the plastics of the future. Their greater adaptability has already given them a wider range of uses than the caseins or the pyroxylins. Their remarkable strength and toughness make them beyond all question the plastics most vital to industry.

Ingredients.—Basically, a combination of carbolic acid and formaldehyde.

History.—An eminent American chemist, Dr. Leo H. Baekeland, in 1909 solved a problem that had baffled scientists for 35 years: he produced a synthetic resin that was fusible and soluble, and could therefore compete with natural resins and shellacs. But, en route, he discovered, at first to his consternation, a resin that at a certain temperature became infusible, tough, and intractable; that resisted acids; and that stood up under 100,000 volts of electricity. It was when he learned to control this remarkable substance that he began to understand what a find he had made. The Bakelite Corporation, founded on Dr. Baekeland's process, was first in the synthetic resin field and is still the largest by a great deal.

Virtues.—The most irrevocably hard and amazingly protean of all plastics.

Products.—These vary according to the manufacturing process used. The most obvious, and the least important, are pipestems and cigarette

[*Continued on page 118*]

Bullfighting, Sport and Industry

Marcial Lalanda made over $150,000 last year. But the bull breeding sons of Don Eduardo Miura took in only $33,000. Then there is the matter of the *propina*.

(This article, dealing with the economics of the bullfight business in Spain, is contributed to FORTUNE *by Mr. Ernest Hemingway.)*

FORMAL bullfighting is an art, a tragedy, and a business. To what extent it is an art depends on the bulls and the men who are hired to kill them, but it is always a tragedy and it is always a business. Just how much of a business it is may be judged from statistics which showed that the Spanish people spent 20,000,000 pesetas[1] ($2,966,000) on bullfights in 1911. Maximiliano Clavo who, writing under the name of Corinto y Oro, is one of the most prominent bullfight critics in Spain—his position on *La Voz* of Madrid corresponds to that of W. O. McGeehan on the New York *Herald Tribune*—disputed this sum at the time and gave figures to show that the Spanish public spent between 28,000,000 and 35,000,000 pesetas ($4,152,400 to $5,190,500) a year on bullfights. Since then the price of seats at the bull rings has doubled and in this last year there were 319 formal *corridas de toros* or major league bullfights in Spain as against 241 in 1915.

Every once in so often you read in the papers a stock story about how Association Football is putting bullfighting out of business in Spain. It is a story that is usually written by a newspaper man on his first visit to Spain, a visit which may be made during the off season for bullfights when football is in full swing. With rare exceptions the major bullfighting season opens at Easter and closes at the end of October. May is the fatal month for the bullfighters. Joselito, Granero, Varelito, all died in that month as well as many matadors of earlier days. May is the most dangerous month because bulls are at their strongest after fresh spring pasture and before the long, hot, debilitating voyages from ranch to bull ring in summer months. Bullfighters in May are not yet at the peak of their training after a winter's inactivity or else stale from the long trip to Mexico or South America.

After October many of the bullfighters go to Mexico, Peru or Venezuela where the season opens as it closes in Spain; others go to the bull breeding ranches of Salamanca to train during the winter with the young bulls and cows, and others spend the winter resting or recuperating. A visitor to Spain sees no bullfighting activity in the late fall, winter or early spring unless he goes out into the country; but to conclude that the bullfighting industry is dying out is as silly as it would be for a European visitor to deduce that baseball was finished because of the empty ball parks in America after the World Series.

There were 230 major bullfights in Spain in 1922. This was the lowest figure in a number of years and was caused by the death in the bull ring, in two successive years, of Joselito—one of the three or four greatest bullfighters who ever lived—and Manuel Granero, a boy from Valencia who gave promise of taking the great Joselito's place. After Joselito, whose real name was Jose Gomez y Ortega, nicknamed Joselito or Gallito, and the last of a great family of bullfighters of that name, was killed in the ring at Talavera de la Reina[2] many people who had admired him swore they would never go to bullfights again. His great rival, Juan Belmonte, retired and when young Granero was killed in Madrid in May, 1921, the public was left without an idol. In 1924 various young matadors were getting a following and there were 248 big league *corridas*. This number was increased to 286 in 1927, in 1928 to 305, and last year to 319.

In this last year 61 bullfighters killed 1,856 bulls in Spanish rings. The bulls were paid for at an average price of around 1,800 pesetas (from $240 to $300 apiece) and were furnished by 104 different accredited bull breeding ranches. That means that the accredited ranches (they are organized into an association for mutual protection and to protect the breed, fighting bulls being bred as carefully as race horses) received something over 3,340,800 pesetas ($495,440.64) for formal or classic fights. In addition they furnished about one third as many defective animals at bargain prices for the apprentice bullfights or *novilladas*. There are also informal bullfights for amateurs, called *capeas*, where any sort of bulls are used, but these come under the head of sport and are not considered here except as they serve as training schools for professionals.

Fighting bulls

The Spanish fighting bull is as different from any domestic bull as the wolf is from the dog. He is not merely a vicious form of the same animal, he is a separate and wild strain directly descended from the wild bulls that roamed the Iberian peninsula, and he is closer kin to the Cape buffalo, supposedly the most deadly of African big game, than to the Hereford, Jersey or Durham. The bulls are raised on big ranches where they live as they did in the days when they were a free roaming wild animal. When they are a year old, the calves are cut out of the herd by men on horseback and branded with the iron of the breeder and with an individual number. They are given names in the breeder's stud book. About the same intelligence is exercised in naming them as is shown in the naming of race horses and Pullman cars. When they are two years old, the calves are tested for bravery. Both the male and the female calves are tested, and the testing may be done either in a corral or on the open range. This test, in which they are allowed to charge a man on horseback and are held off by a *pic* or *vara*, a long lance like a vaulting pole with a short steel pike at the tip, is to determine their bravery and a note is made of their probable courage or viciousness.[3] Those that are not brave are marked for veal. The cows are tested to find their suitability for breeding to maintain the viciousness in the strain. They are tested also as to their following the cape, in order to avoid breeding from color-blind animals or animals indifferent to color. A color-blind bull or one with defective vision is useless for the ritual of the bullfight. Great care is taken that the bull calves should not come in contact with the men on foot, and the bullfighters and amateurs

XUM

Courtesy of the Metropolitan Museum of Art

BULLFIGHT—BY FRANCISCO JOSE GOYA y LUCIENTES

who come to the tests are only allowed to practice their cape work with the female calves. This is because there is no harm in the cows learning about the cape and how to hunt for the man; in fact it is necessary to test them if they are to be bred, but the whole ritual of bullfighting is built on the fact that it is assumed that the bull is having his first contact with a dismounted man in the ring.

The bull is only in the ring about twenty minutes from the time he comes out until he is killed, but all the time he is learning and becoming increasingly dangerous. The bullfighter, from the time he comes out with the red cloth and sword, is given fifteen minutes to kill the bull. If the bull is still on his feet at the end of ten minutes, the matador is given a warning through a bugle call ordered by the presiding official at the fight. A second warning is given three minutes later and a final warning at the end of the fifteen minutes. When the bugle blows for the third time the matador must leave the bull and retire behind the barrier in disgrace. The bull is taken out to the corrals by the steers which are held in readiness to enter the ring the minute the final warning sounds. A bull taken out in this way must, by law, be killed at once in the corral. The disgraced matador may be fined a part or the whole of his contract at the discretion of the presiding authority. If his attitude has been insolent or cowardly, he may be ordered to jail on a charge of disrespect of the constituted authority and by his attitude causing scandal and riot. This scandal and riot caused by a bullfighter who is afraid to kill the bull is something worth seeing for anyone interested in scandals and riots as such. In the early times of bullfighting bulls were allowed to fight several times in the ring and so many men were killed in bullfights that the church forbade anyone taking part in them under pain of excommunication, and this ban was only lifted when a law was passed which required that every bull which appeared in the ring, whether he was killed by the bullfighter himself or not, should be killed at the end of the fight. It is around this law that the modern tragedy of the bullfight is built.

The bull moves quietly in the herd. Separated from the herd he is not so peaceful. As to his strength: I have many times seen a bull lift a horse high in the air and with a thrust of his neck muscles throw the horse over onto his back. Picadors, riding the horses, are many times thrown completely over the barrier by the shock of the bull's charge. The most common end for a picador is mental derangement from the

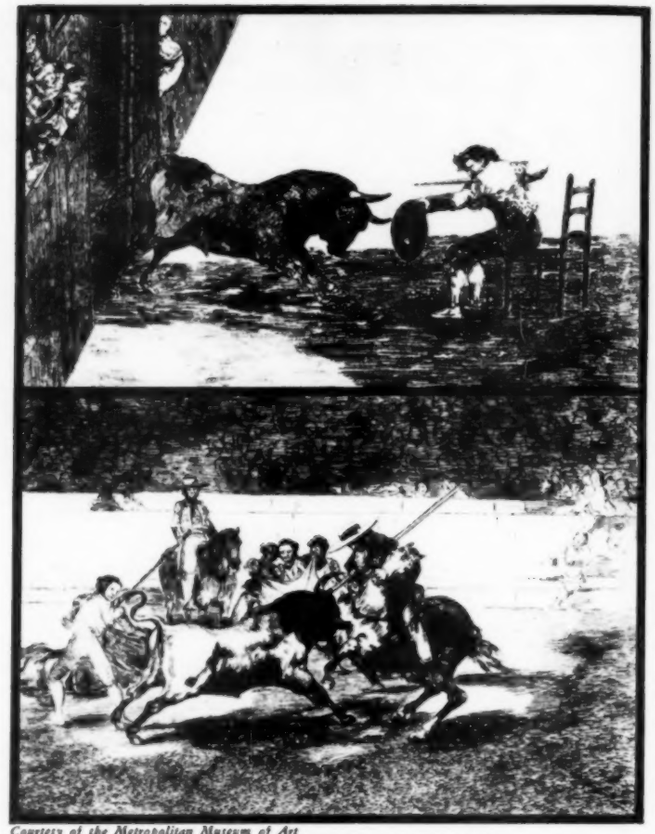
THE TOREADOR
BY EDOUARD MANET

[From the private collection of Josef Stransky]

concussion of the shocks he receives when he is thrown with his horse by the bull.

As to blind bravery: a single really brave bull separated from the herd, will attack, light-heartedly, a motor car (this has occurred many times), an elephant (this took place in the ring at Madrid and the bull would have killed the elephant had the fight not been stopped), and with no hesitation at all a full-grown African lion. This fight was allowed to go to a finish and the bull killed the lion. We do not know how representative a champion the lion was. The point is that the bull showed no fear of him and the more threatening noises the lion made the more eager the bull was to charge.

He is vicious, angry; the great hump of muscle on his neck that gives him power when he hooks rises; his horns are sharp, sometimes as sharp as a porcupine's quill, if he has not blunted them or splintered them against the inside of his traveling cage; and he is as fast on his legs and turns as quickly as a polo pony. There are six bulls to a fight, and they are sold on the hoof at the ranch for between 12,000 and 15,000 pesetas ($1,779.60 to $2,224.50) for the six. The purchaser pays for the cost of putting the bulls in the cages. By the contract he is required to pay for any damage they may do while they are being driven from the ranch to the pens where they are caged. It is he who loses if the bulls fight among themselves and any are wounded or killed. He is required to pay the railway fare from the ranch to the bull ring of a man who travels with the bulls to see they are given food and water, and he guarantees to pay this man a tip of 100 pesetas ($14.83) after the fight and his fare back to the ranch. If from the time the purchaser, who is the bull ring promoter, sees and pays for the bulls on the open range any of them are hurt, die or become sick with an infectious disease, it is the purchaser's hard luck. He also guarantees by contract that the bulls will be unloaded from their cages and rested in the corrals of the bull ring for a full three days before they are to be fought.

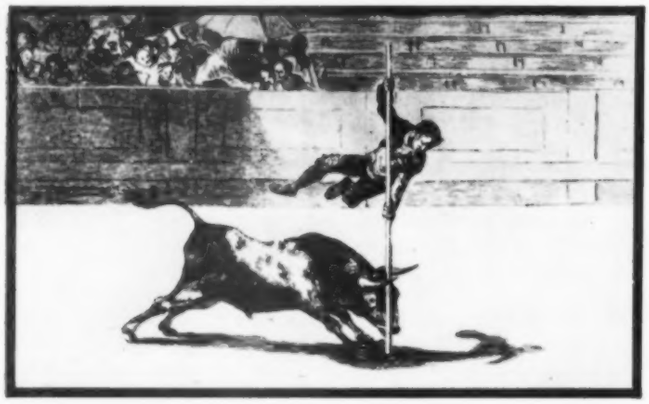


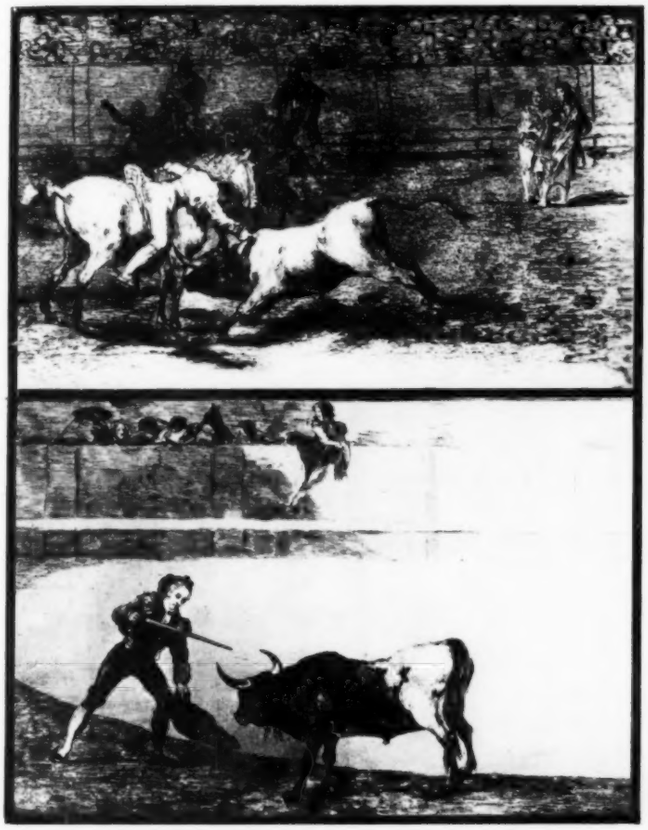
Courtesy of the Metropolitan Museum of Art
A GROUP OF TEN ETCHINGS BY GOYA

There is no truth in the story that the bulls are kept without food or water to make them more vicious. The bull is not a carnivorous animal; he does not kill for hunger but for pleasure and bulls are given food and water until they are put into separate dark pens at noon on the day of the fight.

Breeders of bulls

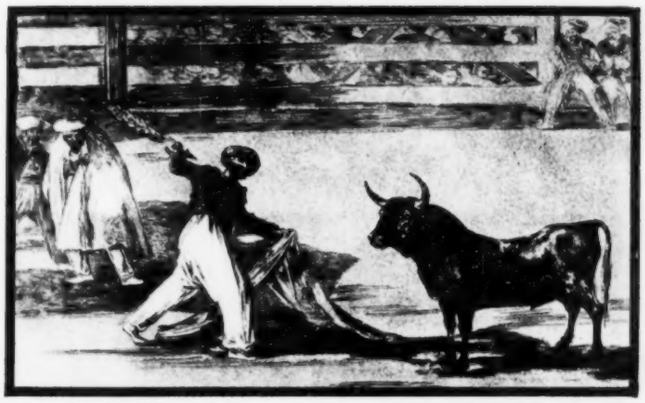
The sons of Don Eduardo Miura of Seville own perhaps





FROM THE COLLECTION, *LA TAUROMAQUIA*

the most famous bull breeding establishment because their bulls have killed more men that any other. This is not because they are particularly brave but because they are very uncertain, reserved, refusing to charge uselessly and frankly, but saving their strength to try and kill the man. They are also big, stand high at the shoulder, have very wide horns and necks that seem to reach longer and longer as the fight goes on. The bravest bulls are usually black, but the Miura bulls are roan, sorrel, steel grey, black and white and various combinations of colors. This last year, in spite of the fact that many of the bullfighters do all they can to avoid having to fight the Miuras, the ranch sold 66 bulls for formal fights.[4] It probably sold nearly half as many defective bulls, that is



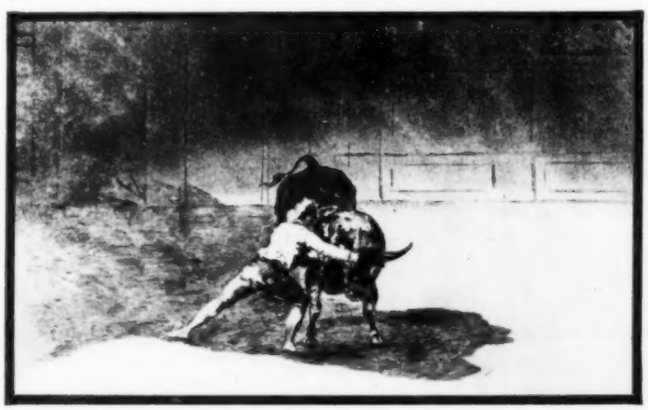
with some defect of horn or vision, for the minor fights which are called *novilladas*. A *novillo* may mean either a bull which is under four years of age or a fully aged bull with some defect that makes him unsaleable for formal fights or *corridas de toros* where the bulls are required by law to be between four and five years old and free from all defects.

At 3,000 pesetas apiece the Miura bulls brought their owners 198,000 pesetas for stock sold for formal fights. If 20 young or defective bulls were sold (they sold 18 in 1928 and the 1929 figure will not vary greatly) at 1,200 pesetas apiece, that adds another 24,000 pesetas. This total of 222,000 pesetas or around $33,000 is the gross income and from that must be deducted all the expenses of the ranch.

Pablo Romero is another famous bull breeding ranch, perhaps the most scrupulous of all in testing, breeding only from the bravest stock, never selling any bulls under age and never seeking to reduce the size of the bulls through breeding down to please the bullfighters. Last year they sold 60 bulls and their gross income from these and the defective bulls will probably not have been above $33,000.

Of all those concerned in bullfighting, it is the conscientious bull raisers who have made the least out of the general advance in prices. In 1865 a first class lot of six bulls brought 6,000 pesetas. In 1885 the price had gone up to 9,000. In 1912, when a bullfighter was making 7,000 pesetas as top price for killing two bulls, a lot of six bulls from the ranches sold for about 12,000 pesetas. Now, when first class bullfighters get 15,000 pesetas for an afternoon's work and Juan Belmonte, who was in a class by himself before he retired, received 25,000 pesetas for a fight, the same lot of six bulls brings only 15,000 pesetas.

The result has been that many bull breeders are unwilling



to keep their stock until they are past four years, and, to please the bullfighters, who sometimes insist on certain breeds of bulls in their contracts, sell their products when they are only just past three years, and are therefore much less experienced in the use of their horns, lighter and less dangerous, the breeders relying on the compliance of the medical authorities to pass them as fully aged.

There is a royal decree which regulates all phases of bullfighting: the weight of the bulls, that is, the dressed weight the four quarters must have when the bull is cut up in the butcher shop of the ring after the fight to be sold; the age (this is judged by the teeth which must be examined on the severed heads by a government veterinary after the fight and a written report made); the height of the horses which are ridden by the picadors in the first third of the fight and bear

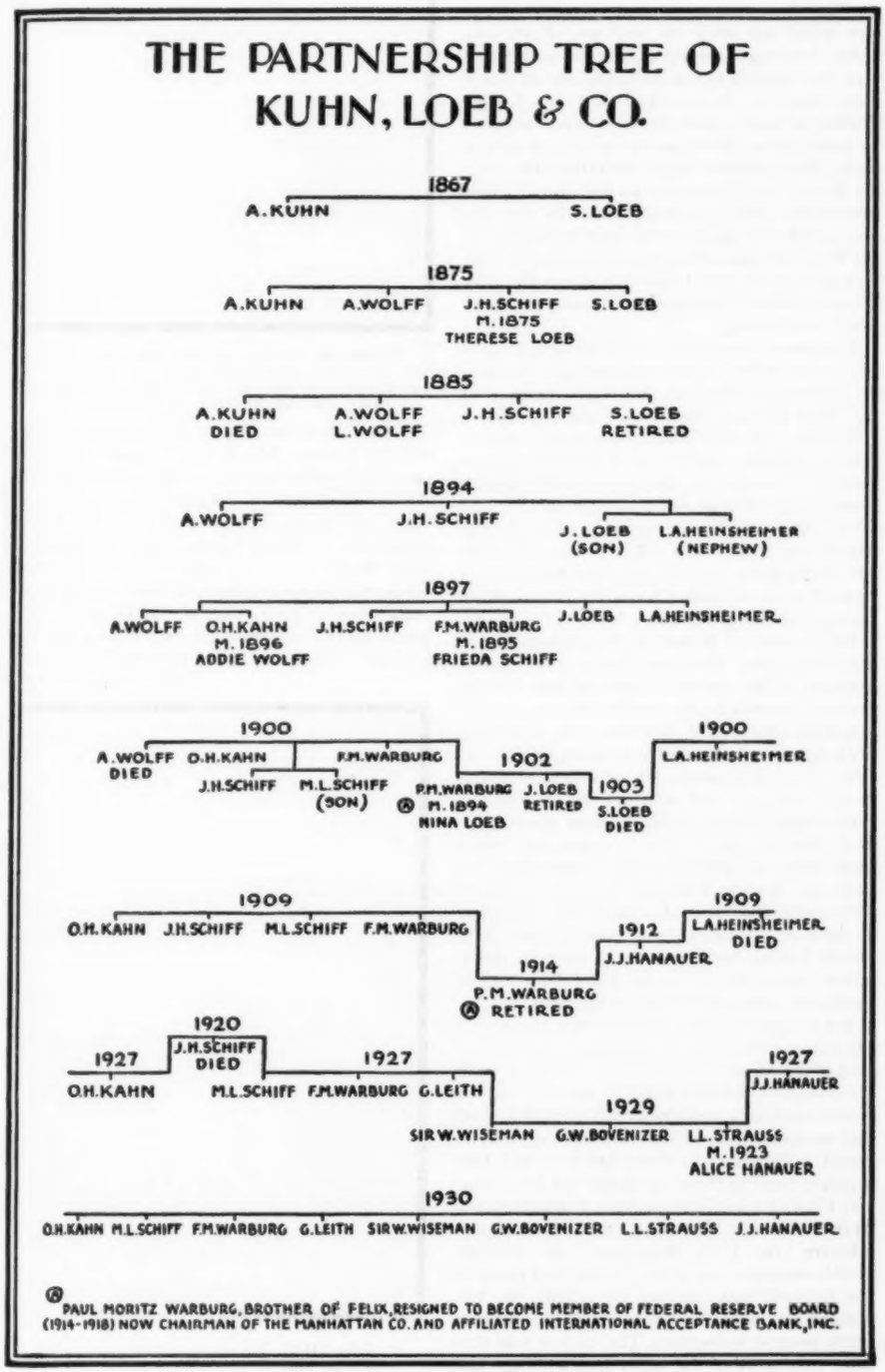
[*Continued on page 139*]

Courtesy of the Hispanic Society of America

THE FAMILY OF THE GIPSY BULLFIGHTER—BY IGNACIO ZULOAGA

Mr. Kuhn and Mr. Loeb

Intended to retire, but founded a banking house instead. To industry, chiefly railroads, their descendants and successors have supplied $12,000,000,000 of credit.



IN ALTERNATE periods of expansion and retrenchment since 1875, American railroads have drawn heavily on Kuhn, Loeb & Co. for capital funds and reorganization counsel. A tranquil but vital railroad center is this private banking house at William and Pine streets, Manhattan. Singly or in syndicate, it has offered nearly $12,000,000,000 of securities, principally those of carrier companies. Much more than a billion dollars of this credit was absorbed by one system alone, the prosperous Pennsylvania. By contrast, the nation's most extensive railway salvage project stands also to Kuhn, Loeb's credit. This achievement was the reorganization in 1926 of the now swiftly convalescing Chicago, Milwaukee, St. Paul & Pacific—a reorganization involving $750,000,000 in securities and 11,000 miles of trackage. It was also through a reorganization of the Union Pacific in 1897 that Kuhn, Loeb became universally recognized as greatest rail financier. A more recent (April 26, 1928) high moment in Kayell history came when in the Kuhn, Loeb offices $63,000,000 was paid by the Pennsylvania to purchase Leonor F. Loree's interest in the Lehigh Valley and the Wabash.

Long and impressive is the list of companies whose securities Kuhn, Loeb & Co. sponsor (see following page) and in whose affairs the bankers maintain a "continuing interest." Many of these affiliations have endured for from twenty-five to forty years, some—such as the Pennsylvania, the Chicago & North Western, and the Chicago, Milwaukee, St. Paul & Pacific—for half a century.

Yet, although Kayell is a house preëminent in railroad financing, it has not limited itself to carrier securities. In the communication field, it has floated issues for Western Union Telegraph Company and (in conjunction with the House of Morgan) for American Telephone & Telegraph Company. The Youngstown Sheet & Tube Company, the United Steel Works, and the Inland Steel Company have called upon it. Its non-railroad transportation clients include North German Lloyd and Brooklyn-Manhattan Transit Corporation. The Westinghouse Electric & Manufacturing Company and the United States Leather Company were reorganized under its direction. Foreign government (Argentina, Austria, Chile, Cuba, Czechoslovakia, Germany, Japan, the Netherlands, Sweden) and municipal (Antwerp, Bordeaux, Lyons, Marseilles, Oslo, Paris, Prague, Tokyo, Yokohama) bonds have been included in its issues. It was Kayell which introduced Royal Dutch Co. shares to the New York Stock Exchange and Pennsylvania securities to the Paris Bourse.

When, on February 1, 1927, Kuhn, Loeb celebrated its sixtieth birthday with an issue of $95,000,000 Missouri Pacific bonds, its total

passed the ten billion mark. Since that time it has done an additional $1,600,000,000 of financing (largest recent issue: $140,000,000 in Pennroad common). Therefore some $11,600,000,000 has gone into American and foreign industry via the House of Kuhn, Loeb. Last August, when the late Bull Market was at its crest, Kuhn, Loeb purchased, without subsequent reoffering, $52,000,000 of New York City notes, and thus indicated its distrust of top-heavy stock prices. Later, when the Market crashed and so many spectacular banking laurels were suddenly withered, Kayell aided the famous banking consortium in its stabilizing work.

* * *

The affairs of Kuhn, Loeb are managed by eight partners, theoretically equal, with interchangeable duties and correlative powers. No partner is a specialist in any one banking field; all matters are decided by the partners in conference assembled. In the absence of a lawyer-partner, Kuhn, Loeb has for many years depended for legal advice upon Paul Drennan Cravath and his associates.

THE MAJOR KUHN, LOEB COMPANIES

RAILROADS

r Baltimore & Ohio
Central of Georgia
m Chesapeake & Ohio
r Chicago & Eastern Illinois
r Chicago, Milwaukee, St. Paul & Pacific
Chicago & North Western
r Denver & Rio Grande Western
Delaware & Hudson
Gulf, Mobile & Northern (G.W.B.[1])
r Hudson & Manhattan (J.J.H.)
Illinois Central
International Great Northern
Kansas City Southern
r Missouri Pacific
Missouri-Kansas-Texas
New Orleans, Texas & Mexico
Norfolk & Western
Pennsylvania
St. Louis Southwestern
Southern Pacific
r Texas & Pacific
r Union Pacific
r Wabash
Western Maryland
Paris-Lyon-Méditerranée
m National Rwys. of Mexico (J.J.H. & W.W.)

INDUSTRIALS

Western Union Telegraph Co. (M.L.S.)
r Westinghouse Elec. & Mfg. Co. (J.J.H.)
m American Tel. & Tel. Co.
Inland Steel Co.
Youngstown Sheet & Tube Co.
r United States Leather Co. (L.L.S.)
Pennroad Corp.
Paramount Famous Lasky Corp. (W.W.&G.W.K.[2])
Brooklyn-Manhattan Transit Corporation
United States Rubber Co. (L.L.S.&W.W.)
Consolidation Coal Co.
Chicago Pneumatic Tool Co. (L.L.S.)
Mid-Continent Petroleum Corp. (J.J.H.)
United Steel Works (Arbed)
North German Lloyd

BANKING

Equitable Trust Co. (O.H.K.)
Chemical Bank & Trust Co. (M.L.S.
The Manhattan Co. (F.M.W.)

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r Companies reorganized with Kuhn, Loeb assistance.
m Jointly with J. P. Morgan & Co. as bankers.
[1] Initials of Kuhn, Loeb partners on board.
[2] Gilbert Wolff Kahn, no partner but son of partner.

The last senior partner of Kuhn, Loeb was the late Jacob Henry Schiff, who died in 1920. His son, Mortimer Leo Schiff, though on an equal plane with other Kayell partners, is perhaps most directly the successor to previous Kuhn, Loeb generations. Mortimer Schiff was raised in the expectation of becoming a Kuhn, Loeb partner, just as Mortimer's son, John, is following the same *cursus honorum* and is at present a member of the Kayell organization. And certainly Mortimer Schiff has been the able son of an able father. Leaving Amherst during his sophomore year (he objected to being conspicuous as a rich man's son), he then worked for James J. Hill, studied railroads under this most expert teacher. In 1900, at the age of twenty-two, he became a Kuhn, Loeb partner and worked constantly with his father, who gradually turned over to him greater and greater responsibilities. In 1914 the two Schiff generations were contemporaries on the Western Union directorate; in 1917 they alternated on a Liberty Loan Committee. By 1920, when the elder Schiff died, the dynasty had been firmly established.

The present head of the Schiff house is a fluent writer and talker, is given to holding *post mortems* on hands of bridge and poker. His home is at 932 Fifth Avenue, Manhattan, where he has a collection of Persian bowls and pottery, of early Italian majolica, and the set of preliminary and completed sketches by old masters which Joseph Green Cogswell collected from 1786 to 1871 and which Mr. Schiff purchased about 1915. The Manhattan cellar is also rich with rare old wines. Mr. Schiff has a summer home at Oyster Bay, a Spanish villa at South Ocean Boulevard, Palm Beach, and foreign quarters in Paris.

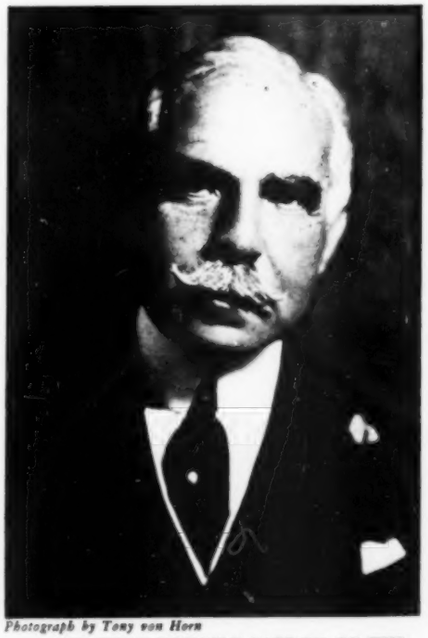
Best known of Kuhn, Loeb partners is undoubtedly Otto Hermann Kahn, most perfect example of the modern patron of arts. During previous periods in the world's history, and in countries other than America, the artist has been subsidized chiefly by members of the nobility. In this country, where knighthood was never in flower and where a man's income, rather than his title, is the measure of his influence, it is the industrialist by whom the Muses must often be supported. And generous have been our modern Lorenzos. Usually, however, they tend to institutionalize their gifts—to endow a chair or a library or a college, and, their checks having been written, to concern themselves personally no more. They have, so to speak, the good works, but not the faith.

But no such vicarious benefactor is Mr. Kahn. His enjoyment of the opera is as keen as his support of the Metropolitan is essential. He brought the Diaghilev Russian Ballet to America, but he would have seen and enjoyed it even if he had had no connection with its coming and even, no doubt, if the price of a ticket had been with him a major consideration. Stanislavsky's Art Theatre, Copeau's Théâtre du Vieu Colombier, the Max Reinhardt Company, the Provincetown Theatre, the Civic Repertory, the Theatre Guild—nearly every *succès d'estime* (and many of the failures) have applied, not vainly, for Mr. Kahn's assistance. Nor does Mr. Kahn support solely esoteric enterprises. The story is told that after producers of the supercinema *Wings* had

Acme
IN POINT OF RANK, KUHN, LOEB & CO. HAS NO SENIOR PARTNER. BUT IN POINT OF PRESTIGE, THE FIRM'S MOST NOTED BANKERS ARE MR. MORTIMER L. SCHIFF . . .

spent a million dollars and were about to abandon the picture, Mr. Kahn supplied the additional half million which saw the project through. And in every theatre, commercial as well as artistic, the Kahn waxed mustache, the Kahn *boutonnière*, the Kahn impeccability is a familiar sight. Kahn is a man with a relish for living (important is the thickness of his toast, keen his enjoyment of jam), one of the fortunate rich whose money has enlarged his capacity for enjoyment without limiting the things he finds

[*Continued on page 116*]



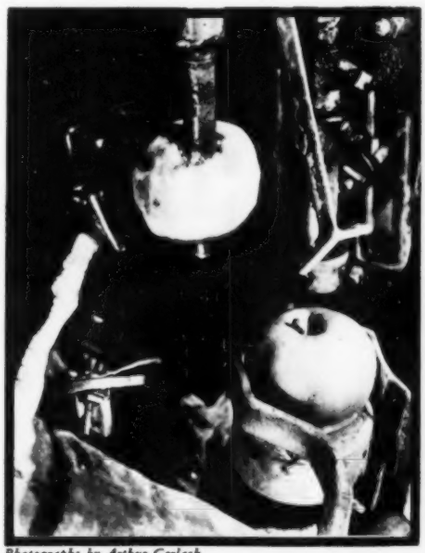
Photograph by Tony van Horn
. . . AND THAT NOTABLE PATRON OF THE ARTS, MR. OTTO HERMANN KAHN

. . . and Apple Pie

The production of our time's staple.

ON a buttress of white tile stands a battery of nickeled cylinders with neat glass gauges where the coffee bobs. Above, a steel rack spiders down the wall. On the rack are rows of circles like a frieze of coins. Each coin is approximately ten inches across, two inches through, beveled on the under edge, brown as an antiqued painting. Each weighs a rough three pounds. A knife will cut it. Three divisions will reduce it to six approximate triangles. Each triangle will emit a faint warm smell of cinnamon and nutmeg. Subdivided with a four-pronged fork, and tasted, the mouth remembers apples. Cheese consorts with it. Coffee leaves it sweet.

On Lexington Avenue the rack is tended by a grim young man with a small, black, bright old eye and a starchy garment like a hussar's blouse. In Laredo the blouse is an apron, the eye is Yankee, and a fan with tissue paper foliage blows the flies away. In Northampton the apron is a clean white dress and the words are bitterly intelligible. In Cody the middle-aged man in the middle-aging shirt sleeves swallows and does not respond. On La Salle Street the asides are Neapolitan. In St. Louis not.



Photographs by Arthur Gerlach
A SMALL, INTELLIGENT MECHANISM, LIKE A CLEVERER APE, PEELS APPLES

The happy statistician

But the full moon faces on the polished rods remain. They do not alter. They are still ten inches, more or less, across, still taste of apple, still cut thrice in six. The same words, hours, associations, even the same price, produce them still. Brakemen accustomed to consume them in Minneapolis order them in Piggott, Arkansas. And taste no change. Sad automobilists buy them from town to town the way a man buys postage. Or Ford cars. Sure of the product in advance. Millions are eaten. More than seventy-seven millions in a year. Nearly a thousand acres of brown pie. Some ten thousand miles of pie on racks. Tons on tons. There is no need for testimonials: "The Duchess of X—— eats apple pie." Chicago endorses pies with $35,000,000 each year; of this, three fourths is spent by housewives, eaten in the home. One Chicago bakery turns out 90,000 pies nightly. The Census Bureau picks a figure —$59,811,168—this means pies produced annually by bakers alone. Of all desserts eaten, perhaps two thirds are pies. Of all pies, two fifths are apple. The statistician smiles with pleasure; he deals with exact units. No need for weighted charts, adjusted curves. This Laredo pie is the statistical brother of that Philadelphia pie. They can be added into bigger and better statistics, divided into *pro ratas*. Why should they alter? From the polished shelf Atlantic City looks like Galesburg. And pie's pie.

And pie is our time's staple. Let him who questions it recall to mind the apple-pie-hung billboards of the country roads, the apple pies that glaze the street cars, the loud printed yelps of pie. There are none. No man sells them. Anonymously as the rains from heaven they fall and are devoured. Bread has become a thousand things but bread— "Dainty-maid," "Tasty." Hams are "Premium," "Smokehouse," "Acorn," "Star." Flour has its more usual synonyms. But pie stays pie. And the five hundred million perpendicular or horizontal or oblique forks that slice its corners are content to take it so. As pie. Sometimes as apple pie. And add the cheese.

HUGE COOKING VATS TURN OUT STANDARDIZED FLAVOR

The obliging machine

It would be agreeable to believe that the whole thing were miraculous, that pies scaled down out of heaven in some remote South Bend at six precisely, a tastier manna for a no-less chosen race. Unhappily it is not so. Anonymous and secret though it be, there is an Industry of Pie. Between the precarious forkfuls on the well-aimed forks and the just ripe Winesaps on the Virginian trees, there stand invested dollars. Men do work. Machines with jerkily revolving metal platforms sprout up pale mushrooms of rich dough, two inches to the jerk, behead them, bunt them off, each lump a pie crust, accurate to the ounce. A boy like a machine, the movement of his head against the movement of his hands in one-four time, his left leg solid, takes the dough lump, knuckles it in flour, flips it to a tin. Eight times in twenty seconds. A small intelligent mechanism like a cleverer ape peels apples. Ladles of syrupy fruit sauce spill above the open dish. The air warms with cinnamon. The doughy veil draws over. Mechanical hands trim, shove, load, twist. An endless chain runs to a revolving table. The revolving table spins to a moving floor. The floor marches through a fifty-foot-long oven. The gas flames sizzle. The pies turn golden, bubble up, take shape. Far down the blistering corridor a narrow slot of daylight grows and grows. A man leans forward, peering at the dark, shoots a long paddle sidewise, catches three disks together on the clever blade, swings to the pie tray, dips them, slides them off. The trays go down the inclines to the street. The yellow trucks receive them, grind away. A warm new smell of pastry rises with the coffee fumes. The cafeterias refill.

Twenty-five million dollars' worth of apple pies per year is Industry. Two and a half million bushels of apples, eight thousand tons of shortening, sixteen thousand tons of flour, twenty thousand tons of sugar, seventy-eight tons of cinnamon and

XUM

nutmeg: all these are Industry. Add the incalculable pyramids of homemade pies (much more than the baker's total) and the gastric imagination gives under it like an over-loaded floor. Spread the business out with its eastern gateway on the Grand Banks, its northern limit along the limits of civilization, its southern edge following the curve of beaten biscuit, its western at Los Angeles, and you have a Stone of Empire. And then remark that the entire Industry is anonymous and that no man, till you scale the summits of the dollar pie and eat the fluffy offerings of the Seven Baker Brothers, knows or cares who makes the wedge he chews on, and you have before you a Phenomenon of a hitherto undiscovered order. You have a major industry completely overshadowed by its product. In this age.

The truth is that the pie is mightier than its stove. And not because its history rises to the remote and succulent antecedents of four and twenty blackbirds. Not at all because New England made it and Ford has eaten it. Not remotely because the addition of ice cream to the crust, like the addition of speech to the moving pictures, saved its face. Pie is what it is in our cafeteriated time—first, because it is good; and, second, because it, chiefly of the traditional dishes, has accepted the machine. As its shape suggests. Bread doughs must rise vegetably in a tepid room. Fruits and cooked fish take to cans (a mere dodge and imitation of machine-made goods, for in the shiny can is nature still: the lump-side pear, the various sardine). Pie alone is what it is.

BOTTOM CRUSTS IN PROCESSION

MECHANICAL HANDS MAKE THE PIE READY FOR THE BAKING

Build an enormous central bakery in Kansas City, ship its output to the coasts, and all pie-eating humanity will consume the same sound pie, which, if less tempting than the best of human cookery, will be always severely better than the worst.

The wise archæologists

Archæologists have a way of guessing at civilizations by the look of their kitchen middens—their horse bones, clam shells, molluscs, fish, baboons. Potatoes were a corner in history. Ice was a full stop.

When New York goes down, the rusty crusts of tin, the tin stains on the rocks, the one, preserved, half-fossil, quart bean can will bear some speculation. But the etymologist who first retrieves from the root of some harsh outland noun the name of Pie and slowly, out of many usages, depicts it as it was, will more nearly reconstruct our era than any digger of the mouldy mains.

"It would appear," he notes, "that men in those centuries were rationed by the machines with a kind of circular biscuit filled with a jelly (chemical traces of which have been discovered forty feet below the present level of the lake at the ancient site of Ch'kawgo) made from a remote ancestor of our melapple.

"This they ate in structures dedicated to the purpose, the ruins of which, as exposed by Dlf and Bzgm, show a rudimentary ingenuity in the machines which constructed them . . ."

A MARCHING FLOOR OF APPLE PIES ENTERING THE IMMENSE GAS OVEN

NO longer can an advertiser depend upon the brute power of money and "dominating" sizes of space to gain or hold supremacy.

WHAT every advertiser faces today is increasingly a competition of the gray matter that is put into his white space, against that which is put into his competitors'.

LESS and less is the act of advertising enough for success. More and more is the art of advertising a deciding factor in leadership.

YOUNG AND RUBICAM · INCORPORATED · ADVERTISING
NEW YORK · PHILADELPHIA

SERVING the following clients: The Black Flag Company, The Borden Company, Edward G. Budd Manufacturing Co. and Budd Wheel Company, Columbia Phonograph Company, Inc., Devoe & Raynolds Co., Inc., Fels & Co., General Foods Corporation, International Silver Company, Johnson and Johnson, The Norwich Pharmacal Company, Pennsylvania Grade Crude Oil Association, Quaker State Oil Refining Co., Reo Motor Car Company, Rolls-Royce of America, Inc., A. G. Spalding & Bros.

Transactions

Condensations and analyses beneath the headlines of the business news.

GOODRICH TO ABSORB MILLER RUBBER CO.

Who.—The B. F. Goodrich Co., makers of tires (Silvertown Cord) and 32,000 other rubber products.

What.—Offered 113,504 shares of Goodrich common for the Miller Rubber Company, an Akron, Ohio, neighbor.

Why.—Miller discontinued its dividends on common shares in January, 1928, passed its quarterly dividend on the preferred on June 1, 1928, reported at the end of the year a deficit of $3,434,900, owing to tremendous inventory losses. Miller had one of the ten largest tire companies in the U. S. with large distributing facilities. Goodrich ranked fourth. The merged company will be second only to Goodyear in all the world.

2 RAYON UNITS TO BE MERGED

Who.—Directors of American Chatillon Corporation and the Tubize Artificial Silk Company of America.

What.—Agreed to combine to form Tubize Chatillon Corporation, capitalized at $23,200,000, reaching third rank among U. S. rayon producers with an annual production of 17,000,000 pounds. Of the four methods of making rayon, Tubize Chatillon will use three. Tubize, alone in the United States, now uses the oldest and most expensive—the nitrocellulose method. Cotton linters is treated with nitric and sulphuric acid to make highly explosive guncotton. Chemically washed to become less inflammable, the spinning solution is made into thread. Very costly, this process accounts for but 9 per cent of U. S. production, but makes a thread of superior quality and strength. American Chatillon uses both the viscose and the cellulose acetate methods. By the viscose process, 84 per cent of United States rayon is made (Viscose Corp., du Pont rayon, American Chatillon). The raw materials are relatively inexpensive: wood pulp, caustic soda, carbon bisulphide. The cellulose acetate method (5 per cent) uses cotton linters or wood pulp treated with acetic acid and anhydride. The resulting substance has the disadvantage of being very difficult to dye. The fourth process, exclusively used by American Bemberg Corp. (2 per cent), treats cotton linters with ammoniacal copper oxide.

UNDERWEAR MERGER OF LARGE CALIBER

Who.—B.V.D. Co., Inc., New York; Atlas Underwear Co., Piqua, Ohio; Regatta Manufacturing Co., Baltimore.

What.—Though individually numbered among the largest manufacturers and distributors of underwear in the United States, these three concerns have joined forces in the new B.V.D., Inc. Each will continue under its former management; all will be supplied with yarns and piece goods from the B.V.D. weaving mills and finishing plants.

Why.—To create for the first time a raw-material-to-finished-product manufactory, producing all types of men's high quality underwear.

FORM BIG COMPANY TO USE CORNSTALKS

Who.—Herbert F. Perkins (president, International Harvester Company), Charles D. Wiman (president, Deere & Co.), Joseph E. Otis (chairman of board, Central Trust Co., Chicago), Frank O. Lowden, Bernard Mannes Baruch, and fourteen other bankers, lawyers, and farm industrialists.

What.—Met in Chicago to organize National Cornstalk Processes, Inc., a $1,000,000 closed corporation for the manufacture of synthetic lumber from cornstalks. Leasing patents or processes developed by Dr. O. R. Sweeney at Iowa State College, National Cornstalks will establish a chain of mills throughout the Corn Belt.

Why.—To provide a market, at $3.00 or more per ton, for the 150,000,000 tons of cornstalks produced annually in this country, to furnish a substitute for wood pulp in industry, and to start turning out at once cheap and strong synthetic lumber. The reclamation of cornstalk waste owes much to President Hoover, who, while Secretary of Commerce, insisted that the Federal Bureau of Standards send men and funds to aid the work at Iowa State.

Peanut Growers Form Marketing Body at Moultrie

Who.—Peanut growers of south Georgia.

What.—Subscribed to a fund to draw up constitution, by-laws, and marketing plans for a peanut growers' coöperative association.

Why.—U. S. Senator Walter F. George believes "the Federal Farm Board can be of substantial assistance to the peanut growers . . . that the price of peanuts [about $8.50 a bag of 95 pounds] can be more directly affected through the assistance of this board than the price of any other staple farm product grown in our state."

Form Nitrate Combine

Who.—Directors of the Chilean Nitrate Producers' Association.

What.—Decided to form a sales and distribution organization which will control the entire Chilean nitrate output (3,500,000 metric tons a year), and a sales commission with headquarters in London to take care of the European market.

Why.—To eliminate brokers' commissions, stabilize price levels.

INGRAIN HOSIERY LEADERS TO MERGE

Who.—Leo Propper, president of the Propper Silk Hosiery Mills, Inc.

What.—Acquired from George B. ("You Just Know She Wears Them") McCallum, president of the McCallum Hosiery Co., the assets and business of the latter organization. The McCallum company began operating the second full-fashioned hosiery mill in the United States in 1892. The Propper company was founded eight years ago. McCallum mills are located in Northampton, Florence, Holyoke, Mass., and Philadelphia; Propper mills in Long Island City and Elmhurst, L. I.

PAINT COMPANIES LINKED TOGETHER IN NEW MERGER

Who.—George A. Martin, president of the Sherwin-Williams Co. (1929 total sales, $75,778,071), and Ernest T. Trigg, president and general manager of John Lucas & Co., Inc. (1929 total sales, about $6,000,000).

What.—Completed negotiations for the acquisition of the Lucas assets by Sherwin-Williams, the largest paint and varnish manufacturing organization in the world. Companies now controlled by Sherwin-Williams include Acme White Lead & Color Works, Detroit White Lead Works, Lowe Bros. Co., Martin-Senour Company. The acquisition of John Lucas & Co., Inc., adds to this chain five Lucas factories, the Lucas-owned W. W. Lawrence and Cleveland Varnish companies, the Lucas Kil-Tone Co. (insecticides, fungicides), and substantial interest in the British Paint & Lacquer Company, at Cowley, England.

[*Continued on page 124*]

Ever climb the dizzy heights of the family step ladder?

EVER feel that funny feeling that hits you in the pit of your stomach when somebody screams, *"Look out!"*

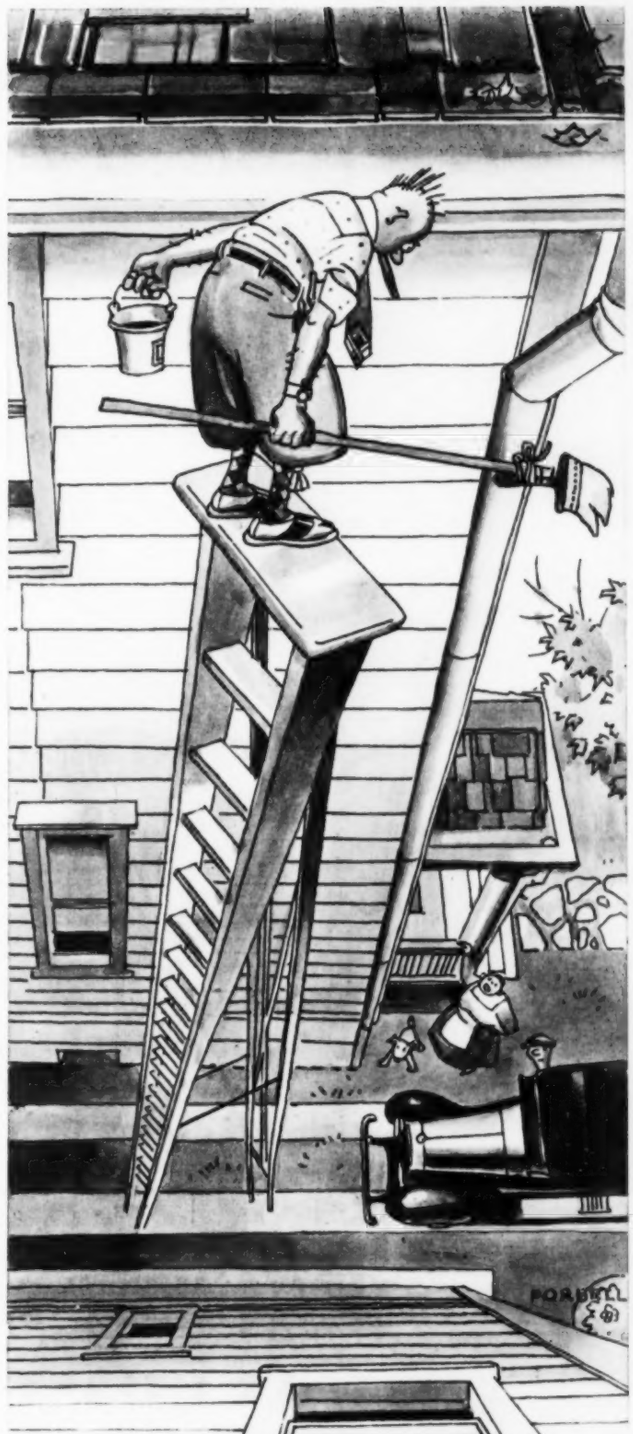
The yearly total of minor hurts of course, runs into the millions, but do you realize that *one out of every four fatal injuries happens right at home?*

Twice as many persons are injured skidding in the bathtub as by firearms! Sitting down where the bed used to be, lifting heavy objects, tumbling downstairs, falling over rugs, burning and scalding . . . such every-day accidents would take pages!

But the "unusual" happens right along, too! There's the cook who kicked at a cat and spent three months in the hospital . . . the school principal who suffered blood-poisoning from a thorn-prick received as he handed a bouquet to a girl graduate . . . .

Usual or unusual, an accident is an accident, no matter how it happens. An Ætna Accident Policy protects your income. It provides weekly indemnities for partial and total disability. It also provides liberal sums for loss of eyesight, arms, legs, etc. In addition, it makes special provisions for the payment of doctors, nurses, hospital and operation fees, and of course, provides for the family if the accident should prove fatal.

Ætna writes practically every form of Insurance and Fidelity and Surety Bonds. Ætna protection reaches from coast to coast through 20,000 agents. The Ætna Life Group consists of the Ætna Life Insurance Company • The Ætna Casualty and Surety Company • The Automobile Insurance Company The Standard Fire Insurance Company of Hartford, Connecticut



ÆTNA

ÆTNA-IZE

SEE THE ÆTNA-IZER IN YOUR COMMUNITY – HE IS A MAN WORTH KNOWING

Burroughs

ACCOUNTING MACHINE

For all types of bookkeeping, accounting and billing. The only accounting machine that multiplies directly. Reduces cost by posting several related records in one operation and by handling most of the detail automatically. Burroughs Adding Machine Company, Detroit

Faces of the Month

© Keystone

Christopher Morley's revivals of Victorian melodramas were successful, but his business policies were not. Hence: a receivership for his Hoboken Theatrical Company. "Business management," he now admits, "is an art as delicate as any of the more esthetic employments."

Wide World

"Few munitions makers gain much financially from their operations," declared Pierre S. du Pont over the radio. "No munitions concern can live by war alone. During the 139 years of the existence of the United States . . . there were four major conflicts before the World War. They lasted about ten years in all . . . How could any independent corporation keep itself alive for 139 years by turning out a product that was only wanted ten years of the time?"

P. & A.

Sidney Zollicoffer Mitchell and his Electric Bond & Share Co. are fast becoming a financial legend. Now there comes a possible European edition of Mr. Mitchell's best-seller: European Electric Corp., Ltd. Its charter is patterned after EBASCO's; its bankers are Bonbright, and Field, Glore; and Sidney A., son of Sidney Z., Mitchell is on the board. Swiss, Italian, and American interests have combined to form European Electric.

U. & U.

Writer Sinclair Lewis shares Writer Morley's fluctuations of fortune. In 1928 his income was over $48,000. He is now petitioning to have his alimony reduced from $1,000 a month to $200. "Reverses" have shrunk his income to a 1930 estimate of under $10,000.

International

Three serious crashes in its first half year of existence have led Transcontinental Air Transport-Maddux Air Lines to put in a new president, J. L. Maddux. It is up to him to make air travel as safe and efficient as railroad. It has been done in Europe, and President Maddux, with the aid of the heavily interested Pennsylvania Railroad, hopes to achieve it here. His first reform: retirement of six operating officials.

International

Back into business on his eightieth birthday goes Charles Ranlett Flint, "Father of Trusts" (shown with his bride, whom he wedded at 77). The innumerable corporations he has put together include American Chicle, International Business Machine, and United States Rubber. His greatest feat: organizing the Republic of Brazil and within six weeks providing it with a navy.

International

Astounding news from New England: the Amoskeag Manufacturing Co. (world's largest maker of cotton cloth) is to pay a dividend of one dollar a share. The 10,000 employees of the Amoskeag mills in Manchester, N. H., are to receive a 5 per cent bonus. Largely responsible for Amoskeag's prosperity is Frederic C. Dumaine, who at sixty-four is the treasurer and guiding power of the company.

XUM

Faces of

That the mint growers of northern Indiana and southern Michigan are forming an organization is important news to Wrigley, Beechnut, and the other chewing gum manufacturers. For within a radius of 150 miles in that region is grown 90 per cent of the world's mint supply. Even more vitally interested in the news is the A. M. Todd Co. of Kalamazoo, Michigan. As "growers, distillers, and refiners of essential oils," the Todds market from 60 per cent to 80 per cent of the region's crop. Sixty years ago Albert May Todd (left) began to raise peppermint in St. Joseph County, Michigan; his two remaining farms, Campania and Mentha, together form the largest tract devoted to mint growing in the world. His son, Albert J. (right), is now active head of the company, which buys mint from hundreds of farmers, distills and markets it on a big scale. Peppermint (*mentha piperita*) remains the mainstay of the mint family, though spearmint (*mentha viridis*) is a younger brother that is growing in importance. The distilled oil is shipped in 400-pound drums, each of them representing from 15 to 20 acres of mint. When peppermint oil was selling for $28 a pound (normal price about $3.50), bankers in Kalamazoo and South Bend accepted drums as collateral, carefully stored them away in their vaults.

Blank-Stoller, Inc.

To the chairmanship of the $2,600,000,000 Transamerica Corporation, most gigantic of U. S. holding companies, comes able Elisha Walker, long the power of Blair & Co., merged with Transamerica. He succeeds no other than A. P. Giannini, who has for some years announced that he will retire at sixty. Mr. Walker may or may not be a "genius." Certainly few financiers enjoy such universal respect.

Courtesy Amtorg Trading Corp.

The Amtorg Trading Corporation is well known to all who have business dealings with Russia. Official Soviet trade organization in the United States, in 1929 it handled $115,000,000 out of a total of a $155,000,000 Soviet-American trade. Comrade Saul G. Bron (left), for three years Amtorg Chairman, has now been assigned to London. His place is filled by shrewd Comrade Peter A. Bogdanov (right), a former head of the Soviet Supreme Economic Council. He will carry through to completion one of Comrade Bron's biggest deals: an order with the Schenectady Works of General Electric for four hydroelectric generators which will be the largest in the world. The last of them is scheduled for shipment early in 1932. They will be used in the great Dnieper River water power project, the dam for which is now being built by Colonel Hugh L. Cooper, New York engineer. Comrade Bogdanov, able as his record shows him to be, will be hard pressed to beat the record of Comrade Bron, who has doubled Amtorg business since 1927.

Notman, Cambridge

"An unpleasant shock", commented London's *Evening News* on the appointment of Professor Oliver M. W. Sprague, of Harvard, as economic advisor to the Bank of England. "We are not a mass producing nation," gibed the *News*, "and the effort of producing John Maynard Keynes, G. D. H. Cole, and Sir Josiah Stamp probably exhausted the nation's capacity." Though admitting that Professor Sprague is probably a good man for the task of "pepping up the Old Lady of Threadneedle Street," the *News* sees the Bank's choice as "menacing . . . . because it vaguely suggests that . . . dollars now talk louder in world finance than pounds."

U. & U.

When Harvard's old locker building at Soldier's Field recently went up in smoke with all its stuffed footballs, Athletic Director Bingham phoned Clarence Dillon, Harvard '05. Mr. Dillon expressed regret, said he would pay for a new building. This was pleasing but not unexpected news to C. Douglas Dillon, Harvard '31, next year's football manager, who had been besieging his father to replace the old building. Current Dillon underwriting is not confined to the Harvard locker house. Dillon, Read's floating of a $14,000,000 loan for the great German electrical trust, Siemens & Halske, is one of the month's important economic events (see page 124).

the Month

Wide World

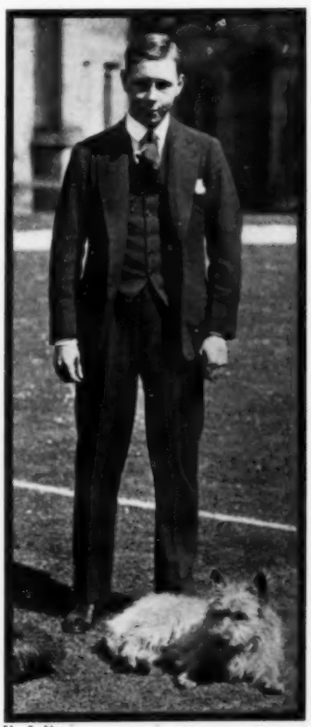
Unless he grows homesick for Vienna, Oscar Straus, of *Chocolate Soldier* fame, will stay a year in Hollywood, composing for Warner talkies.

International

Crude, burly Viscount Rothermere (left), turned politician, has been clamoring ineffectually with his *Daily Mail* (1,945,000 circulation) for what he calls "Empire Free Trade." More successful is his battle with Baron Camrose, formerly Sir William Berry (right), for supremacy in the provincial evening newspaper field. In 100 days at Newcastle, Rothermere founded the *Evening World*, swelled its circulation to two and a half times that of Baron Camrose's long established *Evening Chronicle*—the result of offering free a substantial dinner plus an insurance policy to long-term subscribers.

P. & A.

John Hay Whitney, Yale '26, whose personal fortune is estimated to top $100,000,000, found a job last October—as buzzer boy for Lee, Higginson & Co. at $65 a month. Recently he got a raise, becoming a clerk with a desk of his own. The Polo Association has also given "Jock" Whitney a raise: to a handicap of four goals. Mr. Whitney lunches decently at clubs; not, romantically, at cafeterias.



U. & U.

Incorporation is more and more popular among Britain's landed peers, and the latest to minimize his income tax by turning himself and his 50,000 ancestral acres into a Co., Ltd., is the young Duke of Norfolk, who has recently attained his majority. So stupid that his Roman Catholic tutors could not get him into Oxford, he is in secular rank the most exalted of his faith in England.

Wide World

To Professor Charles F. Scott, of Yale, goes the Edison Medal from the American Institute of Electrical Engineers for his work on polyphase transmission of electrical energy. His transformer changes two-phase power to three-phase.

Keystone

To Dr. Elmer A. Sperry goes the American Iron and Steel Institute Medal for his rail tester. Housed in a car traveling at 7 m.p.h., it locates flaws by their resistance to electrical currents, automatically sprays them with paint.

Wide World

Under the direction of Edward T. Stotesbury, Philadelphia partner of J. P. Morgan, the Homesburg County Prison Band renders a selection. Mr. Stotesbury gave them their instruments, as he has to many other institutions. His fondness for band music may stem from his experiences as a drummer boy in the Civil War.

XUM

Faces of the Month

Keystone

Remarkable, but not unique, among 1929 earnings reports was that of Coca-Cola Company, which showed a net profit of nearly $13,000,000 as against a 1928 net of $10,000,000. Remarkable and much nearer unique was the fact that this $13,000,000 net profit was made out of gross sales of only $39,000,000. Largely responsible is the operating talent of one of the most brilliant executives in the United States, Robert Winship Woodruff, who celebrated his fortieth birthday last autumn by becoming head of the White Motor Company. Since White is in Cleveland and Coca-Cola in Atlanta, Mr. Woodruff does much of his work on trains.

George H. Burr, investment banker, forged an important link in the projected Missouri Pacific system when he accumulated 28,969 shares of Denver & Salt Lake (the Moffat Tunnel road), sold 21,334 outright to Denver & Rio Grande Western, plus an option on the remainder —the whole constituting a controlling interest.

International

Outstanding among copper men is Daniel C. Jackling, president of Utah Copper Co., owner of the biggest open cut copper mine in the world. To him the American Institute of Mining and Metallurgical Engineers awarded the Saunders gold medal—given to John Hays Hammond in 1929, Herbert Hoover in 1928. Mr. Jackling will not receive his medal until he returns this April from Africa, where he spends much time inspecting the great African copper mines—whether from mere technical curiosity or from some more weighty motive is not revealed. The Saunders medal is given for distinguished achievement in mining.

R. H. Macy & Co., under the calm and placid direction of Jesse, Percy, and Herbert Straus, sold $90,000,000 of goods last year in their New York store alone—more than any other store in the world, possibly excepting Marshall Field. Shown here is Kenneth Collins who, at thirty-two, is the sales chief. An entirely sophisticated and un-Babbittish person, Mr. Collins likes to astonish sales conventions with such remarks as this: "We (the advertising profession) are more afraid of a joke than any other business enterprise in the world, except that of the undertaker. And sometimes I think he has a better sense of humor than we."

Cameragrams

Honors are showering thick and fast upon the head (none too brilliant) of William Vincent Astor. Of late he has acquired an important interest in the Roosevelt Steamship Line. And now the New York State Horticultural Society has named him its most expert packer of apples.

Keystone

Captain William Marshall, popular commander of the *Majestic*, has been appointed Commodore of the White Star fleet, a rank which entitles him to fly a special flag, wear distinctive chevrons. Other commands have included the *Teutonic* and *Olympic*. For his service during the War, Captain Marshall was made a Companion of the Order of the Bath. For two years he was Naval Aide to King George.

The Army's chief business man is now Colonel John L. DeWitt, newly appointed Quartermaster General by President Hoover. His business talents earned him the D.S.M. during the World War for his successful organization of the supply section of the 1st Army. His predecessor as Quartermaster General, Major General B. Frank Cheatham, spent in 1928 the sum of $80,439,500.

XUM

INETEEN -THIRTY

modernization year in industry

Mighty buildings rear their heads into the clouds . . . sturdy ships of the air drone away to distant ports . . . new products appear overnight on counters and in salesrooms everywhere.

It is a dramatic age in which industry plays a lead role, for back of all the romantic pageant are the wheels that must turn, ever faster, to set the pace of progress.

And so, *1930—Modernization Year in Industry*, marks a New Era in the design and construction of the Nation's plants . . . an Era in which Austin will be called upon to accomplish still greater achievements in producing plants to supply modern demands.

Austin's nation-wide organization is busy from Coast to Coast . . . designing and building a number of modern plants that herald the New Era in American Industry.

Executives in practically every field of business will find Austin literature, which deals with fundamentals as well as specific building problems, helpful. Wire, phone or write the nearest Austin office for the literature and approximate costs on any project you may be planning.

THE AUSTIN COMPANY

ENGINEERS AND BUILDERS · · · CLEVELAND

THE AUSTIN METHOD OF UNDIVIDED RESPONSIBILITY

Design, construction and building equipment . . . . separate responsibilities ordinarily . . . . become one unified responsibility under The Austin Method. One organization handles the complete project under one contract which guarantees in advance, total cost, time of completion with bonus and penalty clause if desired; and quality of materials and workmanship.

THE AUSTIN METHOD

New York Chicago Philadelphia Newark Detroit Cincinnati Pittsburgh St. Louis Seattle Portland Phoenix

The Austin Company of California Ltd.: Los Angeles, Oakland and San Francisco

The Austin Company of Texas: Dallas The Austin Company of Canada, Limited

ONE OF STUDEBAKER'S 15,000. HE WORKS WITHOUT COMPLAINT

[Continued from page 57]

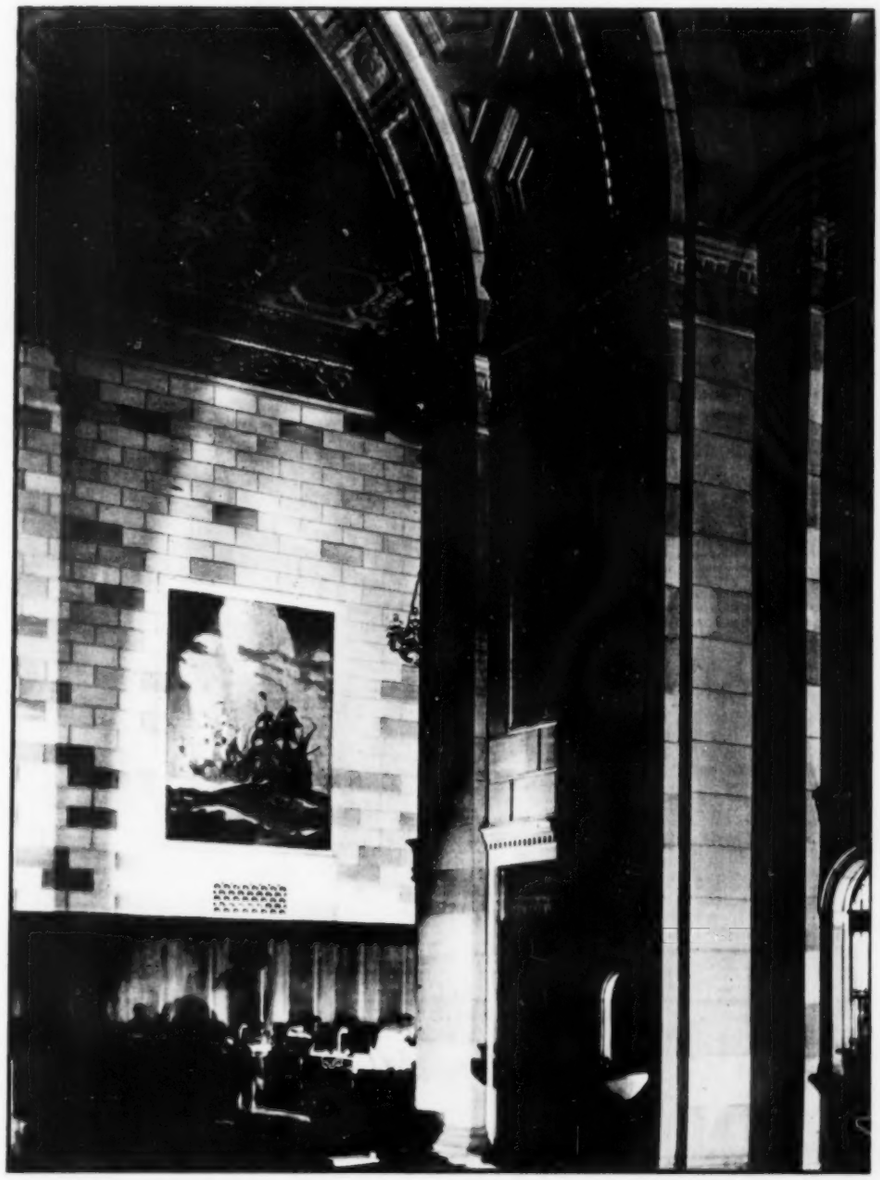
Sometimes the piece of iron is not given its final shape in the foundry molds, but is taken to the forge, there to be hammered into shape and hardened. The forge shop is rows and rows of huge hammers, so huge and strong that if you put a cat under the falling hammer nothing would be left of its nine lives but a little grease. Before each huge hammer is posted a man with tongs. All day he makes just two motions. With his tongs, for example, he grabs from a pile on the right a flat piece of red-hot iron the size of a plow base and swings it beneath the hammer. After the hammer has cracked it one hideously terrifying blow, he grabs the now bended plow base with his tongs and puts it in a pile on the left. How many, Ignatz Koscuoski, can you do in a day? "Oh, bout fi hundert." When "bout fi hundert" are done, a great bell rings. Ignatz goes for his coat and, probably all alone in a crowd of other blacksmiths, walks half a mile through the barracks, out the company gates, takes a street car for his cottage at the other end of town, and then just sits down until dinner, perhaps occasionally fondling the new baby, and after dinner sits and sits till bedtime, after which it is pretty soon breakfast.

Ignatz Koscuoski's job, some say, is exciting for him. "Once a forge man, always a forge man." He thinks hardly at all, but he has just one thought all the days of forge life, the thought that he is Vulcan. The hammer's strength is from his arms; its thunder from his voice. And the broad fire in the bulldog is his soul. Cosmic, titanic, great, majestic, not at all like the service man at the garage station who takes your silver and has to say, "Thank you,"—majestic, transcending thought, and requiring no hope. Besides, for this, he, a man of long experience, gets $42 a week, nothing to complain about.

But if temporarily drafted into this army at the gun's point, we, before risking court-martial, might select some other foundry job. The molders and core-makers, for example. We think of an automobile as not handmade. Profound, therefore, is the thought that each and every automobile is almost completely made by hand—in sand. And fascinating is the thought of playing with this sand, for molders and core-makers are nothing but players in sand. A squad of us will be posted about a circular table. In the middle of this table is a great tin pipe which reaches way up overhead. Down and out of the pipe on to the table comes sand—not quite like beach sand, for it is mixed with oil and sometimes with fine baker's flour. We cannot see the flour, but the oil comes off on our hands. You and I will be working together on either side of a little table beside the big round table. On the table will be two halves of a form—let us say, the form of a crankshaft. We take handfuls of sand and put it into the forms. Then we pat it. Then, deftly, we scatter a little extra sand here and there. Then we smack the two halves of sand-filled forms together, remove the forms, and, lo, we have a crankshaft all of sand. Actually, what we have made represents the hollow inside part of the crankshaft, for what we have made is the core—the hole in the doughnut instead of the doughnut. Much in the same way, men at near-by tables are making molds out of sand, a blacker sand, why, we know not. Later on, our core will be put inside the mold. Then, in the foundry, the red-gold iron will be poured out of ladles by brawny men, Negroes, perhaps, and will flow in between the mold and the core. When the iron cools, the mold will be broken off. Our sand core will be pushed out—and there is an iron crankshaft. But, of course, we will never see the crankshaft. We will see only core after core after core—the cores we make, perhaps a hundred or two a day. When Studebaker isn't running at full capacity (i.e., when it has laid off new hands) most of its core-makers are men who have worked right at those round tables for more than ten years.

The foundrymen take for granted the red liquid that comes out of the elephant spouts, never asking what fecund ore mountain yielded it. So Industry's other workers take for

SOUTH BEND'S RANKING GENERAL—ALBERT RUSSEL ERSKINE, IN COMMAND OF STUDEBAKER



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granted the myriad-shaped castings that come from forge and foundry. In the forge and foundry the jobs are all terribly simple and much the same. Elsewhere the jobs of the privates of the Industrial Army are all a little different. At Studebaker, for example, there is a man who gets the first look at the completed car after it has run off the assembly line under its own power. Usually the doors aren't hinged exactly right—so he pulls and bangs them into position and can finally say O.K. Then, on the assembly line is pretty good fun. Along comes a skeleton. One man clamps on a bracket. Another rushes in and screws. Several yards down, the engine drops into position while four or five men lean over and bolt it. Another man lifts down from overhead an ungainly shiny black gas tank, drops it into place, and somebody else bolts that. The thing grows. Fifty feet from the start you can see it's certainly going to be an automobile.

None of all these men talk to each other. They are busy every minute, but never in conference. And nothing ever happens, except what is always happening like breathing or digesting, except, of course, when blood sometimes spurts out of a nipped finger or when they get laid off.

Bendix

Abandoning for a while our picture of modern industry in general, let us look at a few notable South Bend modern industries in detail. We will begin with a man named Vincent Bendix, who is really an industry in himself. It was as cadet rather than private that Vincent Bendix entered the Industrial Army. But he did work long hours at machines, and privates were his friends. Now he is worth at least $50,000,000 and has recently been the biggest news in South Bend. Bendix is automotive. Bendix starts most of the automobiles in the world, and he stops nearly all of them. Most self-starting devices are hitched up to Bendix starter-drives, and nearly all brakes are Bendix brakes. Not only does he do business with nearly every automotive concern in the world, but nearly all the business he does is done with friends. It is Walter and Charlie and John (Chrysler, Nash, Willys). Bendix talks a great deal—with a reason. He talks to his friends vis-à-vis or over the phone to cheer them and make them happy. He talks to his customers, big fellows, to his lieutenants, to his workmen. He makes more appointments than he can keep. One time in a Paris hotel he had twenty-five men waiting in an anteroom. He had made an appointment with them all for the same time. Early one morning in his $500,000 Chicago apartment some men were waiting for him when he woke up. He saw them at once. Others began to come, and soon three or four conferences were going on in three or four different rooms, so that it was not until six o'clock in the evening that Mr. Bendix managed to get out of his pajamas. And you may well understand that a pajamaed Bendix is no mean sight, for the great Bendix is great not only in stature but also in girth. Such a man, of course, is not ordinary mortal. In no sense is he Napoleonic, but cheerful and easy to get on with. He suffers fools gladly. Nevertheless the Bendix personality is hypnotic. It engages; it persuades; it makes men go out and cheer with an abandoned admiration. Such a man, of course, is not to be regimented. However good a machinist he might have been, no machine could have held him in place—partly because he was a minister's son and partly because he had had a course in engineering. Always he was tinkering. Eventually he tinkered out "the mechanical hand which cranks our car" and revolutionized automobiling the world over. And then he tinkered out an automobile brake. A brake is a very simple thing. It is simply something to step on the wheels when you step on it. The Bendix brake is several pieces of steel which fit inside a band of tough fabric which fits inside the inside rim of the car's wheel. When you step, the pressure applied forces the brake mechanism into contact with the revolving wheel, and this induces the famed Bendix Servo action—an action which automatically uses the very force of the movement of the car itself to stop the wheels. The sum total of these little gadgets and the really not very complicated manner in which they are arranged makes the Bendix brake just a trifle better than any other mechanical (as distinct from hydraulic) brake, so that practically every car has to have them. But the two thousand men and women (a goodly number of strong-armed women in dark blue overalls which make chunky squares out of their figures) who make Bendix gadgets do nothing at all dramatic. They are mostly hitched to not very big machines which punch holes and weld pieces together—miles and miles of whir and drone and clack, clack, clack. But there is something different in this Bendix plant. It's partly speed—the little gadgets fly out of the machine as if in a race, and no sooner are they out than, whoop, a load of them is shot over to another machine. It's partly that the eyes of the workmen and women snap. They are like cats playing with mice, never catching them Foremen and foundrymen are like iron cows chewing their cuds in hell. What with eyes snapping and nuts rattling and the possibility that Vincent himself may any minute come down from Chicago and stride through one of the machine lanes, you get the feeling that the men with BENDIX blazoned on the back of their smocks really know what they are doing and almost care. Is Vincent himself the reason? Is he one of those great generals whose image is always before soldiers?

This Vincent Bendix is certainly one of the two dozen most significant generals-in-chief of the Industrial Age. His significance has gone far beyond the stages of the time when he was a tinkerer. He is always looking for patents to buy, and many are the patents he has bought. Wise, clever, however, without the sinister tendencies of the monopolist, he uses the patents he gets hold of to the advantage of others as well as to himself. Rather than tack on a big price to the amount it costs him to manufacture an article, he adds just enough to give the Bendix Company profit. Thus are big motor men satisfied, for suddenly they discover that he can do the manufacturing cheaper than they could if they should set out to compete with him and invent their own appliances.

His home, he says, is in South Bend, he having purchased one of the mansions vacated by a departing Studebaker. And he himself, not Mrs. Bendix, is filling it with rugs and miscellaneous paintings and inlaid tables and tapestries. But he is not often there. His geometrically progressing affairs require a Chicago base, 38th and 39th floors of the Bankers Building, whence he is daily in touch with Detroit, New York, Paris. No longer content with being the very agreeable spider at approximately the center of the automotive business, he is fast becoming a No. 1 general in aviation. Rapidly his South Bend plant expands. Roofs even now are being hammered into position above thousands of feet of new floor space. Thither he goes several times a week from Chicago via automobile or Samuel Insull's wonderfully comfortable electric railroad. On one trip he fairly staggered a blond, blue-eyed Irishman, named Mahoney, who had been working for him, by saying, "Mahoney, you are general manager." Then back he went to Chicago, leaving in the Mahoney blue eyes a Tennysonian determination. Thus, for all his absences, Bendix is an ever-present power in South Bend. For years, people had been trying in vain to get Daylight Saving adopted by the city. Last year it was adopted—the Bendix Company announcing the fact in the local press somewhat to the bewilderment of the City Fathers.

Studebaker—Erskine

But this industry-spanning Bendix is not the ranking general of South Bend. The ranking general is Albert Russel Erskine, president of the Studebaker Corporation. Today only one Studebaker (Henry's son, Will, the paymaster) works for Studebaker. There is indeed a smart son-in-law of J. M.'s, a New Jersey patroon named Frederick S. Fish, who is still chairman of the board, but the years are upon him. Headman is Erskine, who is curious for more than one reason. In the first place, he is a Southerner—a way-down Southerner, even an Alabaman, one of the few who have become tycoons of the North. And he differs in nearly every respect from the founding Studebakers. They worshipped God with undoubting Presbyterian (John) or Methodist (Clem) regularity. Erskine worships only at intervals. They played games of chance with apologies, if at all. Erskine is akin to many of the world's greatest spirits in loving to watch the intricate dance of mathematics with chance. Not the Church but Business deters Erskine from his gaming. He heard, some years past, that his entirely legitimate relaxation was being discussed by penny-pinching gossips. Bad for business, thought he, and with almost calvinistic devotion to his cause, he foreswore his pleasure. This interest in the laws of chance has a much deeper significance and brings us to the most curious aspect of the Erskine position. Mr. Erskine was not primarily an automobile man—he was a man of figures. Ford, Chrysler, Nash are motor men—and until recently all strictly automotive tycoons have been production men or, in a few cases, supersalesmen, such as Willys.

Mr. Erskine's success in a highly competitive business, based on engineering, becomes, therefore, a strange but significantly modern phenomenon. The Great Age of Business begins to

FOUND ···

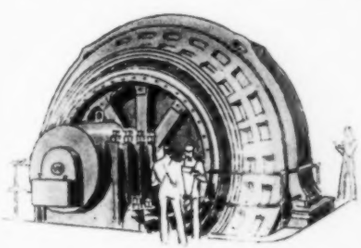
a way to improve ALADDIN'S LAMP

LESS than three years ago a row of glow tubes sat in a test rack before a window in the Westinghouse research laboratories at East Pittsburgh.

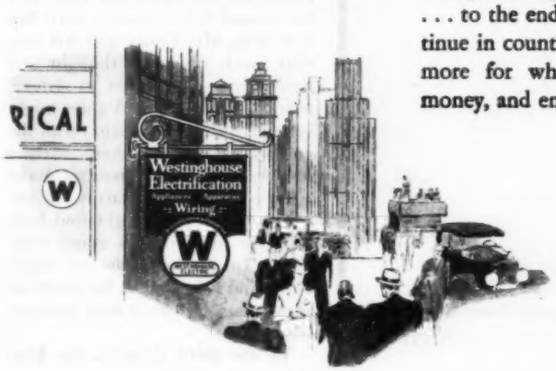
D. D. Knowles glanced at the group one morning and noticed that some of the tubes quite unexpectedly were glowing, while others were not. Some tubes, it was discovered, glowed when the sun was shining and went dark on cloudy days, others responded when a hand touched the glass.

It was quickly recognized that an important new electrical development had come to light. Thousands of tubes were made and tested. Shapes of various parts were altered until a relay was available—so sensitive that a tiny pulsation of energy, less than that expended by a fly walking on a window pane, was made to control enough current to operate machines rated at thousands of horsepower. Thus was born the grid-glow tube. Because of this development a hand waved lightly over a crystal ball in New York City started giant motors in the Homestead Steel mills hundreds of miles away. Aladdin's lamp, which had to be rubbed to get results, is outrivaled by the grid-glow tube which responds to a mere wave of the hand.

To magnify human capacities is the daily work of the Westinghouse organization. In research, in the design of electrical and allied equipment, in the application of electrical power to new



tasks, in the distribution of electrical apparatus for homes, business, and industry, Westinghouse is constantly active . . . to the end that electricity may continue in countless ways to help you get more for what you spend of time, money, and energy.



ELECTRIC POWER BUILDS BUYING POWER

Westinghouse

resemble the Great Age of Government—19th century England. Then it was that Disraeli could be a brilliant Chancellor of the Exchequer, although he could only with difficulty add or subtract. Now it is that a man who cannot carve a steak can supply millions with meat. And so, also, an Erskine can annually get ten million dollars profit out of an automobile he cannot make. Mind, if you like, over matter.

One recent achievement quickly illustrates the unerringness of the Erskine mind when it encounters figures. Late in 1928, the Studebaker Corporation bought most of the Pierce-Arrow Motor Car Company. The Pierce-Arrow company seemed in a hopeless condition—all sorts of bonds and preferred and common stocks and almost nothing in the way of earnings. Mr. Erskine's engineers having sensed a chance to make a more fashionable Pierce-Arrow, Mr. Erskine quickly resolved the financial difficulties into possibilities. He put $2,000,000 cash into Pierce-Arrow, and in 1929 the Studebaker share of Pierce-Arrow profits exceeded $2,000,000—an utterly amazing and astounding feat, enough to make every Studebaker stockholder rise up and call him more than blessed.

The past seven years have been years of great prosperity for the automotive business, but years of frightful competition. To an independent like Studebaker, it might well seem that General Motors would never stop. Meanwhile Chrysler came in with an enormous bang. On the lower flank, Ford gathered up all his energies for sales of a new car, greater than ever. Hudson, Packard, Nash—all have done enormously expanding business, and new life has been thrust into a dozen other concerns. Under such conditions, any one concern might well have slipped. But not Studebaker. True its earnings have not kept to the 1923 peak, but they have been so consistently high that investors habitually regard Studebaker common as underpriced.

Here, then, is the principal business man of South Bend. On six days of the week he drives from palace to plant. The administration building houses a museum wherein are the Studebaker masterpieces. There you will find, of course, outstanding Studebaker models of past decades. But more interesting are the old Studebaker wagons, carriages, and buggies. Priceless, some of the relics must be: the carriage in which President Lincoln rode the night he was shot; the closed carriage which belonged to President Harrison, and his family after him for many a year; the carriage which carried President Garfield to the train which in turn carried him to his death in Buffalo.

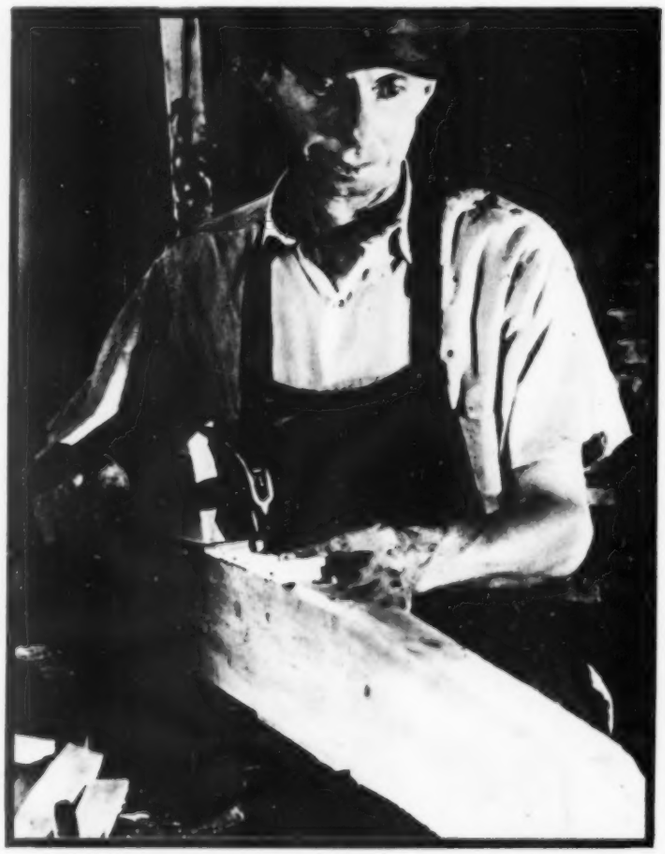
Several floors above the museum is Mr. Erskine's office—the only really "grand" office in town. It is big, has tapestry chairs, and a wrought-iron grilled archway. There you will find him as often as not in golf knickers—a big six-footer with white hair. Throughout the building are hundreds of clerks adding up figures. And for miles behind his back stretch the factory buildings with guards at each entrance. Back there are the foundry and forgemen, the coremakers, the machinists and also the carpenters for body building, and the central power house with gigantic smokestacks three. Also, among those miles of buildings are miniature hospitals, and railroad tracks with freight cars lumbering along around unexpected corners, and dining rooms with good food and pretty waitresses who offer you, among many other things:

Peaches .10
Purée of Navy Bean Soup .10
Roast Ham, Raisin Sauce .25
Assorted Cold Meats with Salad .25
Browned Potatoes .05 Spinach .05
Chocolate Pie .08 Ice Cream .05
Butter .02 Roll, each .03
Service .10

But you don't have to have service if you don't want it.

Steady work with a break for lunch—and the score at the year's end is $170,000,000 of business.

But the most remarkable fact anent Studebaker today is that it is run by only two other men besides Mr. Erskine. One vice president, Harold S. Vance, in charge of manufacture, and one vice president, Paul G. Hoffman, in charge of sales—and there you have the management in toto. No interfering directors, no complicated and unwieldy committees—let only these three agree and a thing is done.



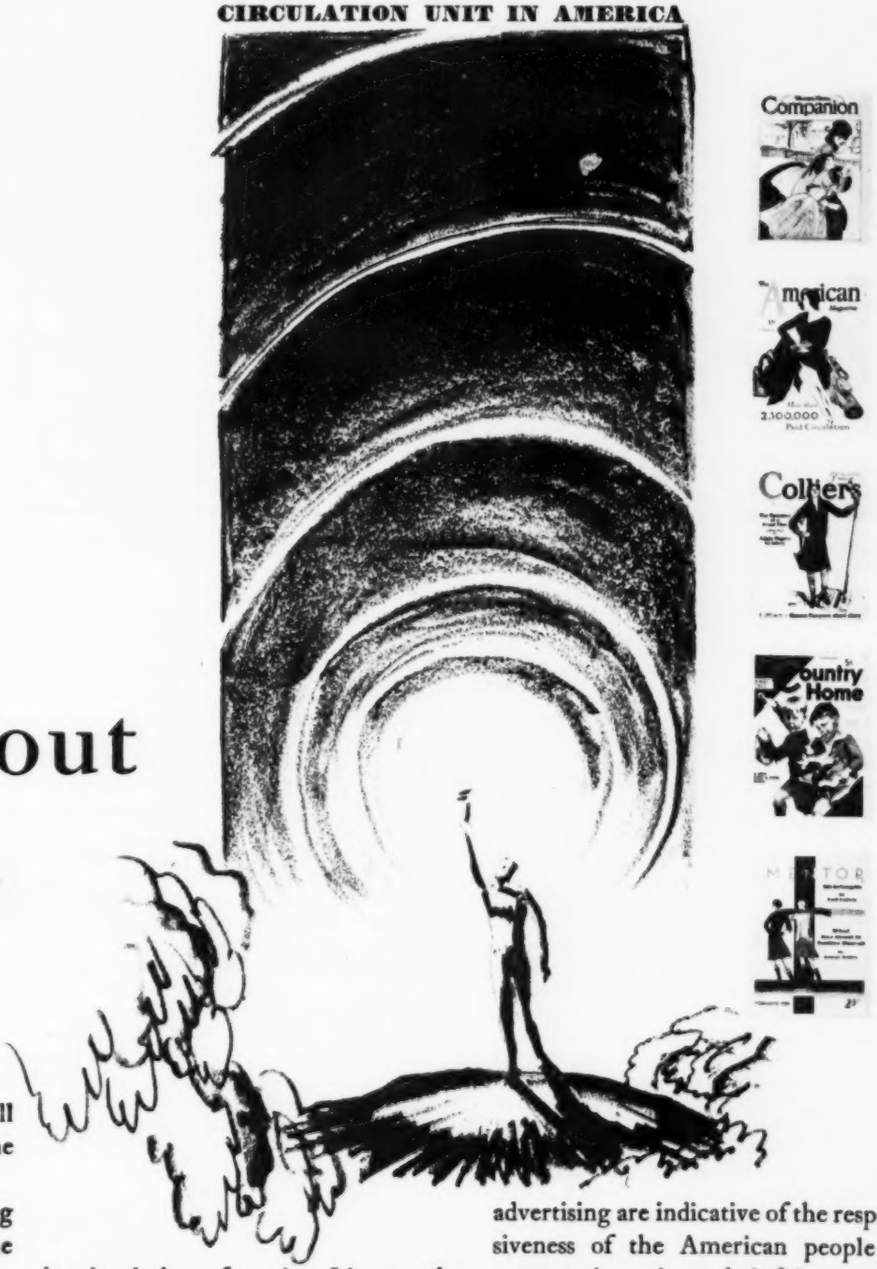
STUDEBAKER BODIES CALL FOR STUDEBAKER CARPENTERS

Dealing as we are primarily with what goes on *in* South Bend, the most interesting man in South Bend is Manufacturing Vice President Vance. He it is who really rules the Studebaker half of the army of South Bend. After the triumvirate has decided how many cars of each model are to be made this month, it is he who schedules the hundreds of different jobs of the ten or fifteen thousand men who will make them. Unlike militarists or philanthropists, he seeks to employ as few men as possible. But attempts at decreasing the costs of productive labor (man power) are not so all important as many a layman might think. That fact is easily explained. Productive labor at Studebaker is only about one ninth of the total cost of car building. Overhead and materials account for the rest. Let us say a Studebaker were to cost $900 to construct, a correct figure for some models. Mr. Vance would pay out $100 in labor on the job. And he would find it most difficult to pay less, except by decreasing salaries—an unlikely measure. No more is man actually *productive* labor; he stands by the machine and the machine does most of the work. He must be there, but he cannot do more than the machine will do. Thus because it is the least important of the three divisions, and because it is the hardest one to do anything about, it is the last one in which Mr. Vance would seek to cut down costs.

But let us look for a moment at the other two divisions under Mr. Vance—overhead and materials. In that same $900 car, overhead is allotted $200. An astoundingly high figure, you might say. But that includes everything not quite tangibly productive: the engineering department, upon which Studebaker must spend $1,500,000 a year; a $2,000,000 coöperative fund for employees; repairs, renewals, upkeep of the plant, amounting in all to $6,000,000; motor trucks to do odd jobs; the scrub women and the sweepers; the clerical force; all these and many more—an aggregate bill that hovers around $27,000,000 a year. But here it is, Mr. Vance will tell you, that much time and thought and ingenuity can be spent to reduce, reduce, reduce. Mr. Vance might issue an order that would mean the company's getting along with a few less inspectors, not so many sweepers, a smaller army of stenographers; or he might find light bills too high, or too many engineers. In overhead the ax might swing and swing again, for overhead is most susceptible to wise manipulation.

To the third division, the $600

THE LARGEST MAGAZINE CIRCULATION UNIT IN AMERICA



Facts about Today

The first twenty-two issues of Crowell Magazines for 1930 have already gone to press.

These twenty-two issues are carrying $1,308,313 more advertising than the same issues a year ago.

The latest issues, upon which an accurate count has been made, show a gain in circulation of 1,063,186 over the corresponding issues of the last year. These *gains* in circulation and *gains* in advertising are indicative of the responsiveness of the American people to constructive, clean, helpful, progressive editorial material—and forceful advertising.

WOMAN'S HOME COMPANION, THE AMERICAN MAGAZINE, COLLIER'S, THE COUNTRY HOME, THE MENTOR

Crowell PUBLICATIONS

MORE THAN 8,500,000 CIRCULATION

CROQUET BALLS PROVIDED THE ONLY PUBLIC SPORT OF THE GIRLS OF 1874—NUCLEUS OF MR. BADET'S NICE MILLION DOLLAR BUSINESS

PLOW SHARES FROM THE OLIVER FORGES. ONE MAN PUTS ABOUT 800 OF THESE UNDER THE HAMMER EVERY DAY

division of materials, many strings are attached. For keeping down costs on materials means far more than just paying the least amount of money for leather and wood and paint and all the other standard equipments of an automobile. Most motor men will admit that many companies pay the same amount for these things. Even tires—when one manufacturer comes down on his quoted price to a motor car company, the others are sure to follow, and quickly. But Mr. Vance will feel the strings pulled by zealous and ambitious salesmen in the field; such-and-such a car has this, why can't Studebaker? Salesmen say that new-fangled windshield wipers and fancy dashboards and deftly turned radiator caps help to sell more cars. And yet even so small a thing as a slight change in the way a tire carrier is constructed might move up the cost five dollars. That $600 allotted to materials must not go up too much, or the public, who pull other strings, will feel it in an increased retail cost.

These things are Mr. Vance's to watch and settle. Quietly he works, and with a smile; perhaps his feet will be on the desk when you call; perhaps he is pacing up and down his large, airy office; perhaps you will find him out, conferring maybe with the other two of the triumvirate. But undoubtedly you will find his mind on Studebaker, for the army which he generals is a large one and he must not loiter at his task. Nor does he want to; Erskine picks his rulers well.

As you leave the plant you realize that at the company the name of Studebaker as it applies to individuals is almost forgotten. But in South Bend, even today, you will still find reminders of the Studebaker family, besides the rambling factory buildings with the signs on all their doors, "This is a Studebaker Year." There is the Studebaker Mail Order Company, which has been doing a thriving business for 30 years and has as its head Colonel George M. Studebaker. When you meet him you are likely to forget that he is the son of Clement the First (and therefore a nephew of old J. M.) for he tries to be abrupt and peppery and to make you forget everything except that he doesn't want to see you. But he is in a hurry and will smile before he rushes off to another one of his offices. It might be the office of the South Bend Watch Company for which he is bound. This is the business of which his nephew, Clement the Third (a departed Chicago Studebaker) is president, but of which he, George, is a guiding factor because it is owned by his mail order company. This watch concern is a handsome little affair and is equipped to make about 75,000 watches a year.

Or Colonel Studebaker might be keeping an appointment with a man named Frederick H. Wellington, who is board chairman of still another Studebaker enterprise—Colin B. Kennedy Corporation, acquired by him last year through that same mail order company. The radio company has plans and facilities for building from 1,000 to 1,500 sets a day, and Colonel Studebaker hopes to do a business of four or five million dollars this year. Not unambitious is *this* remaining Studebaker.

Newer Industries

On one almost noiseless street and just across the alley from old Mr. Badet's South Bend Toy Mfg. Company is another $1,000,000 business. You enter a side door and feel as if you had invaded a privacy, for twenty stenographers look up at you like startled geese, and as rapidly resume a forceful pecking at their machines. One of them saunters toward you, stops to drink at the ice water tank immediately at your left, and returns to her place. Her forearms are muscular. All their forearms are muscular. They type continuously, not love letters but something quite as personal, for they write only to fishermen and only about fishing. The South Bend Bait Company is America's most famed bait and fishing tackle concern, supplying about one tenth of all the $11,000,000 worth of bait (not counting worms), rods and reels bought annually in the United States. Bass (big mouth, small mouth), trout (speckled, rainbow, brown, in brook or lake), salmon trout, pike, pickerel, muskellunge—each must be caught and each with a different "lure," not to mention the great salt water giants, tuna, tarpon, bonefish, sailfish. Most famed of all lures is South Bend's own Bass-Oreno. Other lures are changed or abandoned, but in some remote moment of inspiration it was found that just that oval inch or two of light wood with just that combination of white, scarlet, and yellow would make the bass leap most foolishly for death. This year some 200,000 Bass-Oreno will be bought by the world's fishermen. This is quickly learned from a gentlemanly fisherman and business man, with whom you may walk into a small room where the sweet stench of banana oil adds knowledge to your nose—banana oil to varnish the gay colors. Upstairs, he will open a great cupboard which contains the treasure of the business—long slices of bamboo poles which have come in boats and trains from China, each pole costing about one dollar. From these, with refinements of artistry, are made fishing rods for which fishermen may pay from $5 to $100. (Many is the tycoon who has ten or twenty thousand dollars' worth of fishing tackle.)

The rods are made from splits of bamboo by men. The lures are made by women. Lures are made of many things—woods and metals and chicken feathers. Women sit at long tables and pluck from various boxes the constituents of each lure which their fingers automatically put together. But all lures—wooden or feathered—have hooks. And these hooks come from Norway, for there, in such small quantity as is needed for hooks, is made a finer steel than Bethlehem (Pa.) can bother with. Here, as nowhere else in South Bend, you feel that something is being made personally for somebody. Just this lure will bring just the moment of exaltation to our friend Herbert Hoover or John Smith in a water which only he will forever recall. And just this is worth more to South Bend Bait Company than all their balance sheets can show. For example, Mr. Ivar

Will Foster painted the lower illustration for Pierce-Arrow in 1912. Eighteen years later, Mr. Foster pictures the same scene (alongside) with 1930 models of the same kind of girls, the same kind of car.

Three New Groups

of Straight Eights by Pierce-Arrow

IN FOUR NEW WHEELBASES

HAVING created a Straight Eight line of such rare symmetry as to utterly outmode its field, Pierce-Arrow has gone brilliantly farther in a new series of fine car developments.

The new models are in three groups and four new wheelbases, three of which are longer. All are of delightfully increased spaciousness within . . all are in the custom manner, with appointments of a beautiful and distinguished modernness . . all share the slender, low-swung, patrician grace so truly and exclusively *Pierce-Arrow*.

And these new and ultra-modern Pierce-Arrows are as richly endowed mechanically:

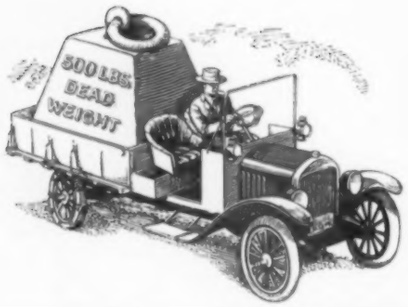
With gears which silently and easily shift *at any speed* . . with an "intermediate" that operates with the smoothness and swiftness of ordinary high . . with a wheel which handles with magical ease . . with super-safety brakes, non-shatterable glass, low gravity centers, hydraulic shock absorbers, etc. . . these latest models embrace every device known to the engineering of fine motor cars and *worthy of Pierce-Arrow adoption.*

In the purchase of a car from income, the average allowance on a good used car usually more than covers the initial Pierce-Arrow payment.

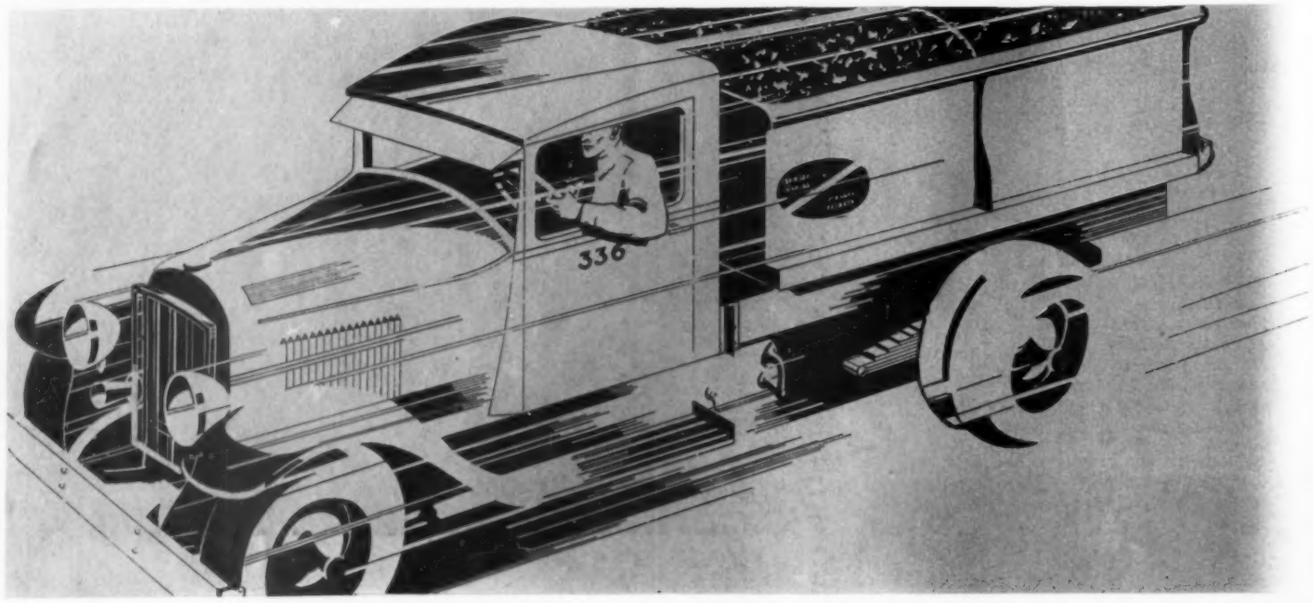
NEW PIERCE-ARROW PRICES . . at Buffalo . . From $2595 to $6250

(Other Custom-built Models up to $10,000)

PIERCE-ARROW



Light on the Dead-load Heavy on the Pay-load



All who do heavy hauling find that to make a profit, loads must be hauled that pay as they go. Gripped in the pincers between State Highway weight limits and small profit margins, structural dead weight is the crux of the problem. Cutting this dead weight in half, Alloys of Alcoa Aluminum furnish the solution.

Exceedingly strong, weighing only ⅓ as much as iron or steel, Alcoa Aluminum for truck body structures is bringing dead weight reduction and astonishing increases in pay-load. As much as 1,400 pounds extra pay-load can be gained on a standard 6 ton truck. For an increased first cost of $400, which can be written off in 7 months, the same truck will work 29 days per year for nothing —run every 11th trip free, with no change in engine power.

And not only in trucks, but in street cars, on railroads—wherever transportation puts "mass in motion"—Alcoa Aluminum is slashing structural dead-weight; transforming dead-loads into pay-loads.

This weight saving with equal strength is the reason Alcoa Aluminum is fast becoming the basic structural metal used in all transportation. But these same savings apply equally well to portable typewriters, vacuum cleaners, furniture and moving parts in all kinds of machinery—for anything that must be made light and strong.

From the research laboratories and development engineers of Aluminum Company of America, a vast fund of information is constantly being dispersed to all industry. Thousands of manufacturers accord the Aluminum Company their confidence and respect—the greatest reward of a progressive civilization. ALUMINUM COMPANY of AMERICA, 2402 Oliver Building, PITTSBURGH, PA. Offices in 19 Principal American Cities.

ALCOA ALUMINUM

ALCOA
ALUMINUM

Hennings (chief owner, and so famed among sportsmen that Sidney Smith talks about him in his cartoons) boasts that he has a "proving ground" for which Studebaker would pay millions. This is what he means. If he wants to test a new lure, he will send it to fifty or one hundred of his customers, such as Zane Grey, asking them to report on its merits. For his sake, and without rewards, they will promptly abandon civilization to endure sun or storm. To him they will send voluminous reports, from which the behaviorism of a certain fish with respect to a certain lure can be analyzed to a fin's point.

As unlike wiry, slender Mr. Hennings in stature and demeanor as their product is unlike his lure, are the O'Brien brothers (not related to George of the varnish company). It was twenty-three years ago that these twin brothers, now greying, twinkling-eyed, stoutish, began to interest themselves seriously in lathes. Then it was that they founded the South Bend Lathe Company. Since then it has always been the same. One year James J. is president; next year Miles will be. They take turns. But it should not make much difference to you which is president now; they look alike, and both will sit down and talk to you in white linen dusters. They will admit that they do not specialize in very tremendous lathes, nor do they make to order. But the ones they make, ranging from 350-pound babies like the one they recently sold to William Wallace Atterbury (a Christmas present to his son), to three-tonners, are shipped to seventy-eight countries; 5,000 of them a year with an average price of $500 each. Two are now with Commander Byrd; many more with practically every large industry you could name right off. Big users are the electric companies—Western and General Electric, Westinghouse, on down the line. And even submarines—some of them—have South Bend lathes.

Farther out of town than the lathe company, farther out even than the O'Brien Varnish Company or Wilson Brothers' factory is a street of new, clean-looking buildings. If you went by hurriedly and did not bother to read signs over their doors, you might think they were school buildings or libraries or museums, perhaps. But this street is a street of factories: newcomers to South Bend, all erected within the last two years or so. You begin to read the names: John Baumgarth Company ("Art in Advertising"), a brand new printing plant that roams over four acres and more; M. B. Skinner—steam specialties is its specialty; the Empire Box Company; Bantam Ball Bearing Company; Bike Web Manufacturing Company, whose products you might recall having seen advertised; and the Belleville Lumber Company. These are the new South Bend, with near them pretty little houses—also the scheme and planning of a Belgian named Colpaart, who could see no reason why South Bend should not have its home real estate and factory development combined—to everyone's advantage.

Back to town again, past the row of department stores, across an intersection where a bell tinkles and traffic changes, up toward the Palais Dance, across from the bank whose president, Rome Stevenson, is now a vice president of the American Bankers Association, into the hotel that old James Oliver used to run. Liveries run at us—but butchers they might be or bakers or grocers. We move among the movie palaces, gas stations, realtors, chamber of commerce, barbers, candy stores, trolley cars, "eat" signs, morticians, porters, flunkies. We hear: "Thank you, sir" . . . "Come again" . . . "Greatest in the world" . . . "Pleased to meet you" . . . tip . . . "Goodby." This was what we saw first—the visible half which loudly greeted, and with a hot, trade-lustful hand now bids farewell.

South Bend, inland, artless, most unepical, having its visible and invisible halves, a city of 100,000 souls with world-demanded products to the value of more than $300,000,000 per annum, a great American average. One one-thousandth of America.

An autumn sun is setting. Follow it out through the fields. It is harvest time. The air is heavy with a smell of most exquisite richness which rises and falls in intensity. It is the smell of peppermint squeezed out of barnlike presses. These Indiana and southern Michigan fields produce 90 per cent of all our peppermint, enough to flavor all America's chewing gum. And in 1930 the peppermint business is to be organized. A South Bend aroma duly organized with intent to pervade, profitably, the nation. But the moral eludes us, the pompous generality is obscure. The sun sets. Cars come out from town, stop on the roadside, switch off their lights. In perfume of peppermint, love, too, is made.

Ewing Galloway

SOUTH BEND FROM THE AIR. IN THE FOREGROUND THE CABINET WORKS OF THE SINGER SEWING MACHINE COMPANY

XUM

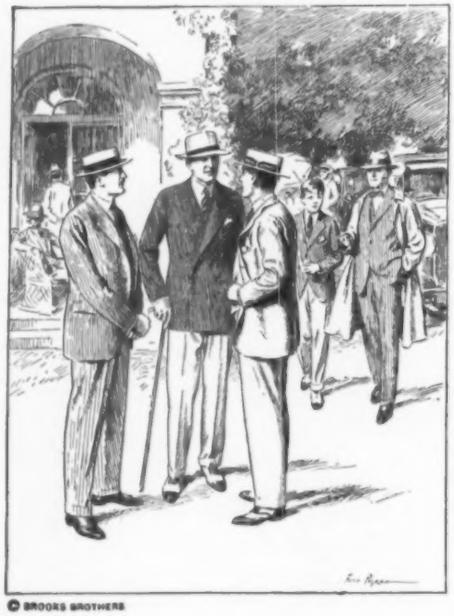
ESTABLISHED 1818

Brooks Brothers

CLOTHING,

Gentlemen's Furnishing Goods,

MADISON AVENUE COR. FORTY-FOURTH STREET
NEW YORK



© BROOKS BROTHERS

Outfits for Southern Wear

Send for "A Wardrobe for THE SOUTH"

BRANCH STORES
BOSTON
NEWBURY CORNER OF BERKELEY STREET
NEWPORT PALM BEACH

Railroad Consolidations, Old and New

[*Continued from page 40*]

removed two sources of stockholder discontent. But the main reason for the remarkable docility of the stockholders was that 61 per cent of stock of both companies was owned by the same stockholders. Where no such common interests exist, the problem of minority stockholders often threatens the entire consolidation program. The Van Sweringens in particular have watched their plans come perilously near this rock.

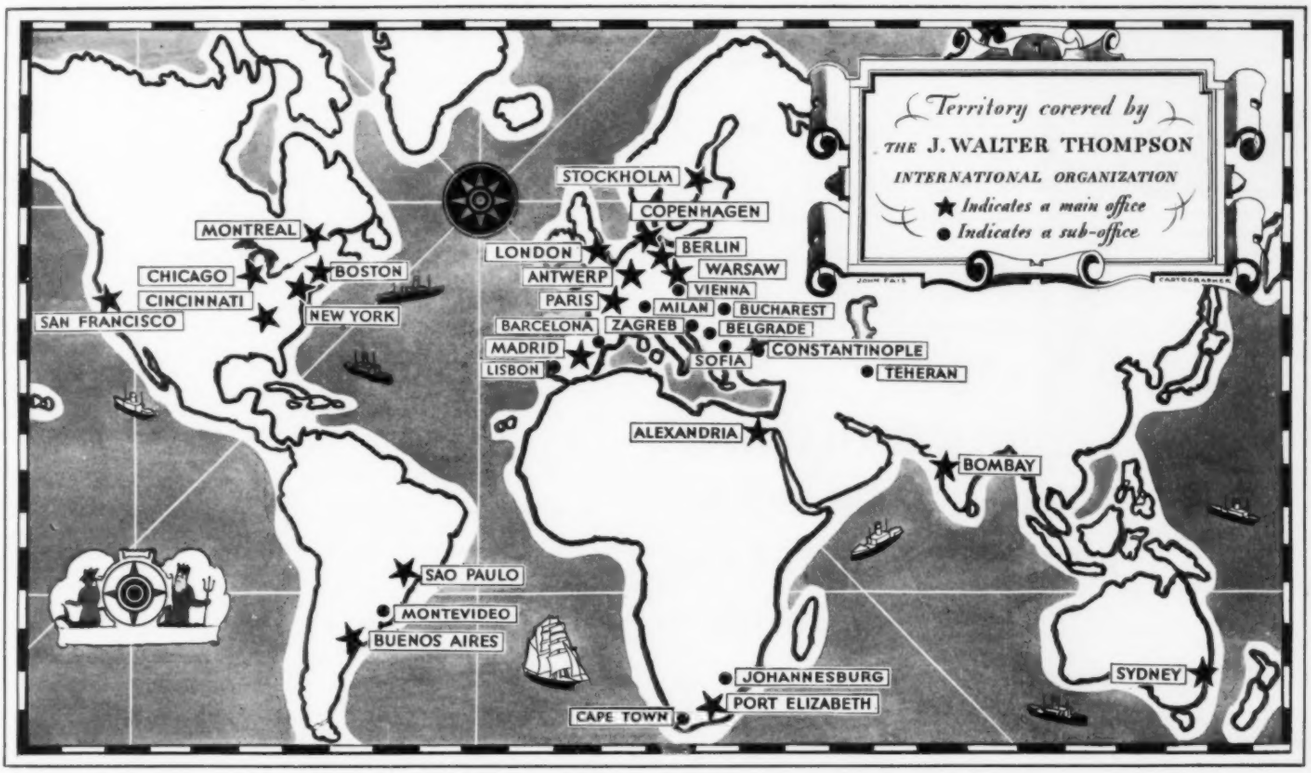
The Short Lines.—The Transportation Act in opening the door for consolidation had especially in mind the short and weak lines. They run over some 50,000 miles of track and perform many vital functions. The Death Valley Railroad in California, a road 20.6 miles long, originates and handles all the borax produced in the United States. There were many short lines in 1920, and the way to keep running was the great railroad problem. A decade of railroad prosperity since then has transformed many a 1920 weak line into a 1930 strong line, but the treatment of short lines still looms large in every consolidation. When a system grows in size, the short lines connecting with it grow even punier in relation to the giant. In order that the short lines may keep on serving their communities, the new system must often make some provision for taking them over. Railroaders of the old school chafe at this burdening of the strong with the weak. Leonor F. Loree, trained under Harriman, disregarded short line interests in his 1926 southwestern merger plans. When short line officials protested at the hearings, he bluntly replied: "This is an age of competition." His attitude toward the short lines may have been one of the reasons that the Commission frowned on his project. There is a growing tendency to regard the short line problem as one which the large systems must intelligently shoulder.

The Final Plan

Under the terms of the Transportation Act the Commission could permit no consolidation which was not in harmony with its Final Plan. This argued the existence of a nation-wide framework into which the railroads themselves might fit each separate regrouping and readjustment, and on December 21, 1929, the Commission provided such a framework. Many of the systems it outlined are already in existence or have long been in process of organization. But others were pictured for the first time and measurably startled the railroads involved. The most intense interest centered about the Commission's handling of the trunk line situation, and here it was that the Plan was most surprising.

The New York Central, already consolidated, was not much changed; the Pennsylvania, which desires no change, was called upon to give up its stock interests in the Wabash, the Lehigh Valley, and the Norfolk & Western; both the B. & O. and the Van Sweringen's Chesapeake & Ohio–Nickel Plate systems were confirmed and strengthened; and all the roads which were left over, which have been bones of contention throughout the last ten hungry years, were astonishingly swept into a fifth trunk system headed by the Wabash. To this system was granted nearly every road it had sought; others were showered upon it for good measure. The constructive work of the I.C.C. in the East appears most clearly in this table:

BALTIMORE & OHIO		CHESAPEAKE & OHIO		WABASH	
Roads Desired	*Allocated to*	*Roads Desired*	*Allocated to*	*Roads Desired*	*Allocated to*
Reading Co.	B. & O.	Hocking Valley	C. & O.	Lehigh Valley	Wabash–Seaboard
Central of N. J.	B. & O.	Pere Marquette	C. & O.	Wheeling & Lake Erie	Wabash–Seaboard
Buffalo, Roch. & Pittsburgh	B. & O.	Erie	C. & O.	Pittsburgh & West Va.	Wabash–Seaboard
Western Maryland	Wabash–Seaboard	Nickel Plate	C. & O.	Western Maryland	Wabash–Seaboard
Detroit, Tol. & Ironton	½ B. & O. ½ Wabash	D. L. & W.	C. & O.	Akron, Canton & Youngstown	Wabash–Seaboard
Lehigh & Hud. River	New Haven	Virginian	N. Y. Central	Ann Arbor	Wabash–Seaboard
Wabash	Wabash–Seaboard	Wheeling & Lake Erie	Wabash–Seaboard	Chicago & Ill. Midland	C. & O.
Ann Arbor	Wabash–Seaboard	Chicago & Eastern Ill.	Chicago & No. Western	Lehigh & New England	New Haven



FOR NEARLY ELEVEN YEARS *the J. Walter Thompson Company has been building a world-wide organization of* fully-equipped *branch offices. Today this organization reaches 58 nations through 20 main offices and 10 sub-offices.*

On-the-spot Surveys to answer the question . .

"*How can* I *increase* Export Sales?"

FOREIGN MARKETS *offer a growing opportunity for American-made products.*

Exports of electrical machinery, for example, increased 60% last year . . . of industrial machinery, 32% . . . of manufactured foodstuffs, 5% . . . of chemical and allied products, 15%.

Possibly export business may be available to you at lower cost than equivalent domestic increase . . . . . Possibly it is wise that export volume be built into a bulwark against inevitable fluctuations in domestic demand. Already several outstanding American firms are securing a profitable 10% to 45% of their total sales abroad.

On-the-spot surveys alone can locate these markets, classify them according to the sequence in which return on investment can be anticipated, and plan logical marketing and advertising approaches.

In determining these factors, the J. Walter Thompson Company draws on the experience gained over a period of ten years by its Foreign Organization, which now employs over 300 individuals abroad, located in 15 main foreign offices and 10 sub-offices. Each of these offices is operated under the supervision of American-trained executives assisted by native personnel.

The specific functions of this organization are market analysis, sales quota building, and advertising—*founded on first-hand contact with consumer preferences and prejudices.*

Working with us, the exporter deals with a single agency, yet secures direct personal contact in every important market of the globe.

Interested manufacturers are invited to write us direct at our New York address.

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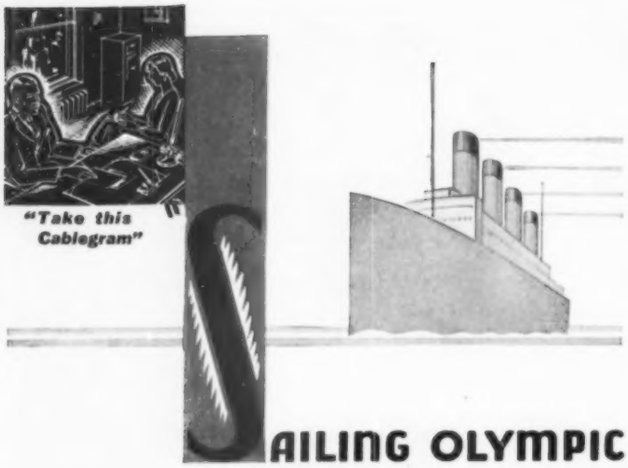
XUM



SAILING OLYMPIC TONIGHT STOP ARRIVE PARIS FOR MEETING FRIDAY"

EXECUTIVES bound for Europe favor the White Star express service, because it enables them to round out a full week at the office, enjoy a week on the briny, and report punctually for business appointments in London or Paris over the following weekend.

No time need be lost on the run if work is pressing. Seek out a secluded spot on the mammoth liner and dictate away to your heart's content. Keep track of the market by radio, and in touch with your office the same way.

Plenty of social gaiety aboard ship, when you need a bit of relaxation—with the healthful tang of the sea to put new ozone in your lungs and give zest to your jaded appetite.

Sail on the *Olympic*, if that's "your" steamer, or on the great *Majestic*, world's largest ship, or the stately *Homeric*. Many other popular liners to choose from, including the *Belgenland*, famous as a world cruise ship; *Lapland*, *Minnewaska*, *Minnetonka*, *Adriatic*, etc.

30 Principal Offices in the United States and Canada. Main Office, No. 1 Broadway, New York City. Authorized agents everywhere.

WHITE STAR LINE
RED STAR LINE
ATLANTIC TRANSPORT LINE
International Mercantile Marine Company

Less spectacular than this new eastern grouping, but perhaps of greater economic significance, is the tendency of the Plan to break up the east-and-west trend of rail combinations. Instead of directing trade routes toward the Atlantic ports, the Plan diverts them to the Gulf of Mexico. Instead of converging on New York, Philadelphia, and Baltimore, its systems radiate out from the great mid-western centers, from Kansas City and St. Louis. Thus the Union Pacific is deflected to the Gulf at Kansas City by the addition of the Kansas City Southern, and the Chicago & North Western by additions is carried from Chicago straight down the length of the country to Mobile. The allocation of the Seaboard to the Wabash, of the Katy to the Burlington, and the grouping of the Frisco with the Rock Island all tend to divert traffic from the congested Atlantic ports. Plainly the Commission believes the days of the Atlantic seaboard's traffic dictatorship are ended; the new capitals are dotted along the Mississippi Valley.

How final?

One more aspect of the Plan must be noted before leaving this introduction. It is at least possible to look at the little pamphlet brought forth by the Commission, not as the *Final Plan*, but as *Report No. 12964*, an interesting and moderately helpful document which is more of a textbook than a handbook. There is some reason to believe the Commissioners themselves take a rather academic view of their work. Almost since the Transportation Act instructed them to formulate a plan, they have been beseeching Congress to be relieved of the task. As Congress has done nothing about their yearly petitions, they now reluctantly produce something which they could title "A Possible Arrangement of Some 1,400 Railroads."

This is not because the Commissioners are not intelligent men, or because they are unwilling to work, but because there already exist such close relationships between the railroads that arbitrary gifts to this or that system may well be impossible to effect. Within the last few years a new factor, in the form of the railroad holding company, has made these relationships even more complex. While the I.C.C. has jurisdiction over all companies engaged in interstate commerce, it is doubtful how much control it has over a company which hauls no trains, navigates no rivers, but owns a dozen blocks of stock in as many railroads. The brilliant Van Sweringen brothers, with the help of J. P. Morgan & Co., created such a company when they created the Allegheny Corp.; and the Pennsylvania and Kuhn, Loeb & Co. did the same thing with Pennroad Corporation. The Commission observes that intersystem holdings by one of these companies would defeat the purpose of the Plan and properly insists that its twenty-one systems must be independent in fact as well as in name. No one will argue the point with the Commission, but how, Mr. Williams may wonder, can the new Wabash effect such more or less heroic divorces as these:

Company	*Now Controlled by*
Wabash	Penn. R. R. (48.8%)
Lehigh Valley Co.	Penn. R. R. (30.2%)
Pittsburgh & West Virginia	Pennroad Corp.
Wheeling & Lake Erie	Nickel Plate
Western Maryland	B. & O.
C. & O. of Indiana	C. & O.
Norfolk & Western	Penn. (42.6%)

To make the Wabash system alone, these are the eggs which would have to be unscrambled. Add the separation of the Burlington from the Great Northern and Northern Pacific, the divorce of the Mobile & Ohio from the Southern, the surrender by the New Haven and the Pennroad Corporation of their holdings (respectively, 26 per cent and 15 per cent) in the Boston & Maine, and it begins to be clear how deep a cut the Commission would make across the corporate relations of the roads. In many cases officers of the controlling roads have already declared publicly that divorces are unthinkable. Short of an act of Congress, it is hard to see how such violent and wholesale changes can be made in less than a century of litigation.

This is not to say that the Plan is without merit or that it has not made its contribution to the solving of the railroad puzzle. The most cursory glance at these maps will show innovations suggested by the Commission which can be, and probably will be, put into effect quickly and advantageously. The Commissioners do not expect much more, and it is inconceivable that Mr. Williams, knowing the nature of the trials through which he and his fellow railroaders have passed and must still pass, should think that an end has been given "to these things also."

THE MOTOR CAR BUILDER "TALKS CAR" WITH 10,000 OWNERS •

THEY are *his* cars. No matter how many thousands have come off the assembly line—no matter how far away they have been sold—*his* cars still. • He knows every feat of engineering skill that has improved their performance, every obstacle that has been surmounted in building them. Who, better than the automobile manufacturer himself, can make the new owner believe in his car? • If the head of a great motor company could actually "talk car," face to face, with the men who buy his automobiles, he would have the most loyal group of owners on earth. • What he *can* do—has already begun to do, in a few instances—is write a real, personal letter to every car buyer. Through such a letter, telling how to use the car and how to get the most out of it, he is able to fire the customer with his own strong enthusiasm. And if the message is typewritten and hand-signed, *on a letterhead of Coupon Bond*, the reader knows it is genuine the moment he picks it up. • Why have so many of the country's leading firms selected Coupon Bond as the foundation for all their executive letters? Because it is a supremely fine grade of bond paper—100% clean, new rags. And because its nationally known watermark proclaims its quality wherever letters are read. • Our portfolio, "The Modern Trend in Letterheads," and a new booklet, "The Executive Letter," will be sent you on request. (In writing for them, please use your business stationery.) ¶ *Coupon Bond is but one paper in the Eagle-A Line of Bonds, Ledgers, Writings, Index Bristols, Offsets, Covers, Book Papers, Mimeograph and Manifold Papers—the right paper for every business purpose.*

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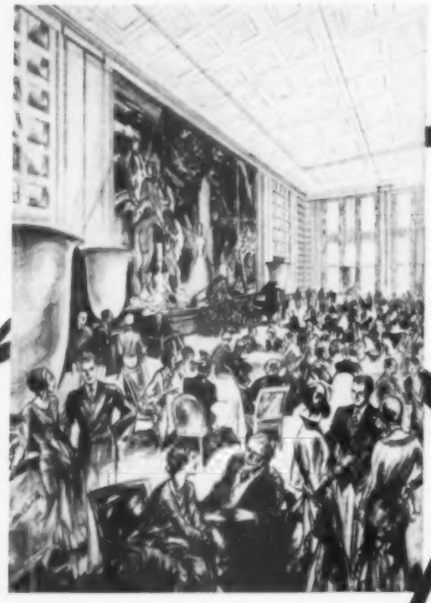

Salon Mixte of the "Ile de France" at tea hour

THE gypsy world of society, art and letters is never bored on land or sea. ◦◦◦ The *"Ile de France"* with its glittering modernistic salons, is the gathering place of the wits and the gourmets, the stage on which one sees the smartest frocks in smartest settings ...afternoon tea and evenings in the Salon Mixte are always gay and beautifully chic. ◦◦◦ Breton sailors, trained in a long and splendid tradition... stewards who anticipate every wish...de luxe suites that couldn't be more luxurious...all outside rooms with private baths. ◦◦◦ No wonder the sophisticates take it for granted and cross the "longest gangplank in the world"... from the heart of Manhattan to Havre, the port of Paris.

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"France"
Mediterranean-Moroccan Cruise
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Five and a half days to Plymouth, England

By de luxe Weekly Express Service, New York direct to Plymouth, a waiting express for London, a few hours later the covered pier at Havre, three-hour express to Paris. ◦◦◦ The new *"Lafayette,"* the *"De Grasse"* and the *"Rochambeau"* form a cabin fleet that makes economy smart.

French Line

Information from any authorized French Line Agent or write to 19 State St., New York

Mr. Kuhn and Mr. Loeb

[*Continued from page 90*]

enjoyable. Freudians, perhaps, would consider him a thwarted artist, would cite his early devotion to music (he still plays piano, 'cello, violin) and the poems and dramas composed at the age of sixteen and burned by the author's family. They would instance also Roger Wolff Kahn and the elder Kahn's encouragement of the younger Kahn's jazz orchestra. But such a theory leans toward the sentimental. Almost every civilized person is artistic in his youth, and those truly possessed of the creative impulse seldom turn out to be international bankers of the first order.

Nor should Mr. Kahn's public reputation obscure his professional talent. On the wall of his downtown office hangs a framed and commendatory letter from Edward H. Harriman—a souvenir of Kuhn, Loeb's successful reorganization of the Union Pacific in 1897. In Germany, in England, and in the United States (he has been a citizen of all three countries) Mr. Kahn has been for almost fifty years a banker, and on Wall Street his knowledge of Little Theatres has long been balanced by his knowledge of Big Railroads.

Kuhn, Loeb Partner Felix Warburg belongs to the famous banking family which came to Hamburg, Germany, during the 16th century, where, in 1798, was founded the 130-year-old banking house of M. M. Warburg & Co. He came to America in 1894, married Frieda Schiff, daughter of the late Jacob Schiff, in 1895, and became a Kuhn, Loeb partner in 1896. His brother, Paul Warburg (who married Nina Loeb, daughter of Solomon Loeb) was a Kuhn, Loeb partner from 1902 to 1914. Prior to the War, the Kuhn, Loeb–Warburg connection was of the utmost importance, as the United States was then a debtor nation whose bankers turned frequently to Europe to finance their enterprises. Felix Warburg shares the traditional Kuhn, Loeb philanthropy, has in one corner of his office a filing system to keep track of some fifty or more charities.

The modern internationalism of money is well evidenced by the presence of Sir William George Eden Wiseman, 10th Baronet, as Kuhn, Loeb partner. Sir William, emphatically a Britisher, fought on the Western Front, was gassed at Ypres, and, invalided from active service, came to America as a kind of chief propaganda agent for the British and Allied forces. After the United States entered the War, Sir William and Colonel Edward M. House became very friendly, and when the War was ended Sir William and Colonel House continued to exert their unofficial but considerable influence at the Peace Conference, Sir William being adviser to the British delegates on American affairs. He returned to America with the Balfour Mission and, in 1921, became Kuhn, Loeb member, was made a partner in Kuhn, Loeb, January 1, 1929. He is also a Paramount Famous Lasky director.

Other Kayell partners are Jerome Jonas Hanauer, George Wallace Bovenizer, Lewis Lichtenstein Strauss, and Gordon Leith. Mr. Hanauer, who has been with Kuhn, Loeb for forty years (since 1891), supervised the financing of railroad equipment during the War period of Government control. He was also in charge of the allotment of Liberty Loans. Irish-born, Mr. Bovenizer articled himself to Kuhn, Loeb at seventeen, studied banking by night at New York university, progressed steadily to his present position as partner and head of the bond and syndicate division. Mr. Strauss was the confidential secretary of President Hoover from March, 1917, to September, 1919, worked with him at sessions of the Supreme Economic Council and Peace Conference. He was also with Mr. Hoover at Palo Alto on the night of the presidential election. He met Mortimer Schiff in Paris in 1919, joined Kuhn, Loeb the same year, and on January 1, 1929 (along with Mr. Bovenizer and Mr. Wiseman) became a partner. Mr. Leith is London representative, heads also his own London firm.

The history of a banking house is almost entirely the history of its bankers, so that as the eight present partners are the Kuhn, Loeb of today, the previous partners were the Kuhn, Loeb of yesterday. But though no man dominates today, there is no question but that one man alone was largely responsible for the rise of Kuhn, Loeb to its position today. This man was, of course, the late Jacob Henry Schiff. Born in Frankfort in 1847, Jacob Schiff came to America in 1865, and, after a varied brokerage and banking experience, joined Kuhn, Loeb in 1875. Founded in Lafayette, Indiana, about 1850 by Abraham Kuhn and Solomon Loeb,

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Fast—you can multiply, divide, subtract and add more rapidly than you ever believed possible. Silent—as pencil and paper. Sturdy—constructed to handle quantity production of figures without strain or fatigue. There's a place in every business for this new small Electric Monroe . . . . . .

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it's so small that it takes up less space on your desk than a small telegraph blank. It's so light—only 13¼ pounds—that it can be moved around without effort. Plug it into a light socket—direct or alternating current is all one to this newest and smallest of electric adding-calculators.

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HIGH SPEED ADDING-CALCULATOR
The Machine for Every Desk

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Orange, New Jersey

Gentlemen: I would like to try the new small Electric Monroe in my own office—no obligation, of course.

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ONLY THE LEADER TRULY LEADS . . . .

It is singularly fitting that Frank A. Seiberling's thirty-three years of leadership in tire manufacture should now be marked by the announcement of a complete new line of the finest tires he ever built or that ever bore his name . . . Captained by the new Seiberling Special Service Balloon, each of these superb new tires embodies exclusive features of contour, tread and carcass that result in extra mileage, easier steering, pillowy cushioning . . . The quality of their materials and design is joined with an unduplicated tire building efficiency to produce a value obtainable in Seiberling Tires alone. There is no like—but only contrast . . . The Seiberling Rubber Company, Akron, Ohio.

Seiberling

moving later to Cincinnati, the firm of Kuhn, Loeb & Co. successfully operated a general merchandise business, in connection with which they extended considerable mercantile credit. In 1865 (the same year that Mr. Schiff came to this country) the partners decided to retire and moved to New York, intending to lead lives of leisure. In 1867, however, they went back into business, this time as commercial bankers in New York City. Mr. Kuhn died within the decade, and in 1885 Mr. Loeb virtually retired, leaving Mr. Schiff as sole director of Kuhn, Loeb fortunes.

A detailed discussion of Mr. Schiff's work in the next two decades would involve a history of American railroads, plus at least several chapters from the lives of Samuel Rea, James J. Hill, and Edward H. Harriman. In a summary of a few sentences, it may suffice to point out two sufficiently obvious facts—that before the century there were few great industrial combinations: financing in its largest aspects was almost entirely connected with the railroads; and that these railroads were largely built with European capital. With his many Continental connections (especially Sir Ernest Cassel and Max Warburg), Mr. Schiff was well able to bring European money into American railroads. Men like Hill and Harriman were the rail kings of the period, but it was Mr. Schiff, who, in a large measure, supplied the revenues of their empires.

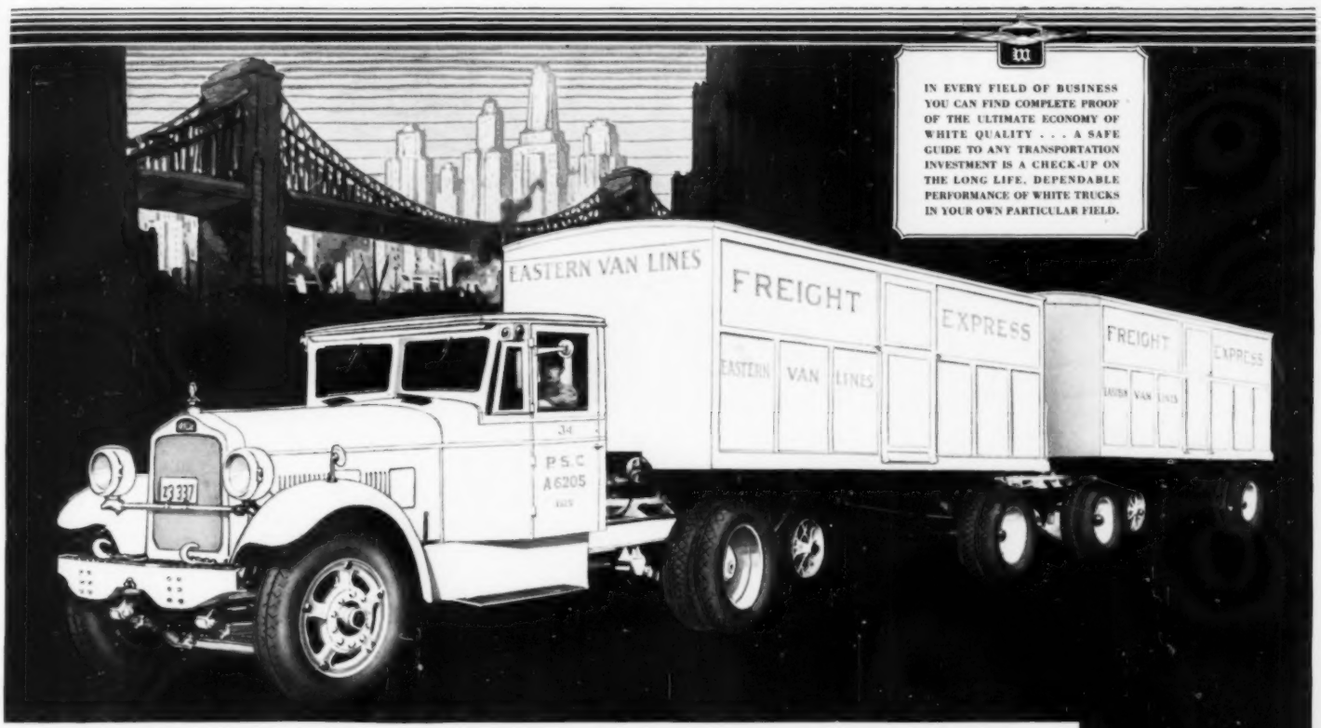
Plastic Age

[*Continued from page 82*]

holders. These are made by the same processes as are employed in pyroxylin and casein products: the liquid resin itself, with no important additions beyond coloring matter, is cast into blocks and machined into shape. But synthetic resin is important because of its industrial products, which are made by less direct processes. The Bakelite Corporation makes no telephone receivers nor automobile parts, and yet its products are on every telephone and automobile in the country. To various licensees the Bakelite Corporation supplies synthetic resin. Under the name of "Bakelite A" it goes as a powdered crystal to the Atwater-Kent factory, where it is combined with finely ground sawdust (wood flour), heated, and molded under pressure to form radio parts. Or it goes as "Bakelite Liquid A," a dark, honeylike substance, to Westinghouse Electric, there to impregnate sheets of cotton duck or Kraft paper, and, after the proper squeezing and heating, to emerge as "laminated phenol," material harder and tougher than wood. By the first method (molding) are made radio and automobile parts, telephones, electrial instruments, door knobs. By the second method (lamination) are made insulating materials, wainscoting for interior decoration, table tops, timing gears. That it can be reënforced with raw materials like sawdust and cotton cloth makes synthetic resin so valuable to industry.

Makers.—The dominant figures in resin plastics are the five Brothers Karpen of Chicago—Samuel, Leo, Adolph, Michael, and Oscar—probably the largest makers of upholstered furniture in the United States. They became the controlling factors in the Bakelite Corporation when their synthetic resin company, Redmanol Chemical Products Company, merged with Bakelite. Karolith, greatest of the casein plastic makers, is likewise Karpen-controlled. Bakelite has one very important competitor: Durez, a comparative newcomer to the field. More recent developments that may or may not challenge the supremacy of Bakelite and Durez are the discovery by Dr. Hal T. Beans, chemist at Columbia University, of Durium, a synthetic resin that makes flexible, unscratchable Victrola records, and the growth of a resin cryptically called "Beetle" by its maker, the American Cyanamid Company. Two years ago some plastic manufacturers held a dinner, at the conclusion of which, by way of a toast to the industry, they hurled the plates madly about the room. Made of Beetle, they caromed noisily but safely off the walls.

Future.—The tale of the Beetle plate-hurling no longer thrills plastic makers because it is past. More useful is the suggestion that Beetle crockery be used in lunatic asylums, jails, and on wild parties. Raw materials for plastics may be discovered anywhere, in the deeps of the sea, in a tree top, in a goat's udder. The product itself may be transformed into a speedboat or into a Corinthian column. It is an industry with a promising past and an unpredictable future.


IN EVERY FIELD OF BUSINESS YOU CAN FIND COMPLETE PROOF OF THE ULTIMATE ECONOMY OF WHITE QUALITY . . . A SAFE GUIDE TO ANY TRANSPORTATION INVESTMENT IS A CHECK-UP ON THE LONG LIFE, DEPENDABLE PERFORMANCE OF WHITE TRUCKS IN YOUR OWN PARTICULAR FIELD.
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A heavy duty economy truck for faster movement of heavy loads—

There is an increasing need for a truck unit that has ample power and capacity to handle heavy loads on faster schedules with greater economy. White designed the Model 59 six-cylinder for this purpose.

It is built entirely to specifications to fit the individual needs of the operator who has an unusual hauling job. The Model 59 is available in a variety of wheelbases as a regular four-wheel chassis or a six-wheel tractor type with drive on all four rear wheels.

The adaptability of this model, the dependability of its performance and the marked economy of its operation have proved the solution of many problems in heavy duty hauling. The powerful six-cylinder engine supplies ample power for the easy handling of peak loads at sustained highway speed. Westinghouse four-wheel air brakes assure positive control at all times.

For trailer operation or for relatively high-speed operation as a heavy duty truck the Model 59 delivers an entirely new type of transportation. In city or long distance hauling it meets every requirement for higher average speed, greater capacity and more power in the transportation of extremely heavy loads.

Today no operator need go beyond the facilities of the White Company for any transportation requirement where the utmost economy of operation and the availability of widespread service are demanded.

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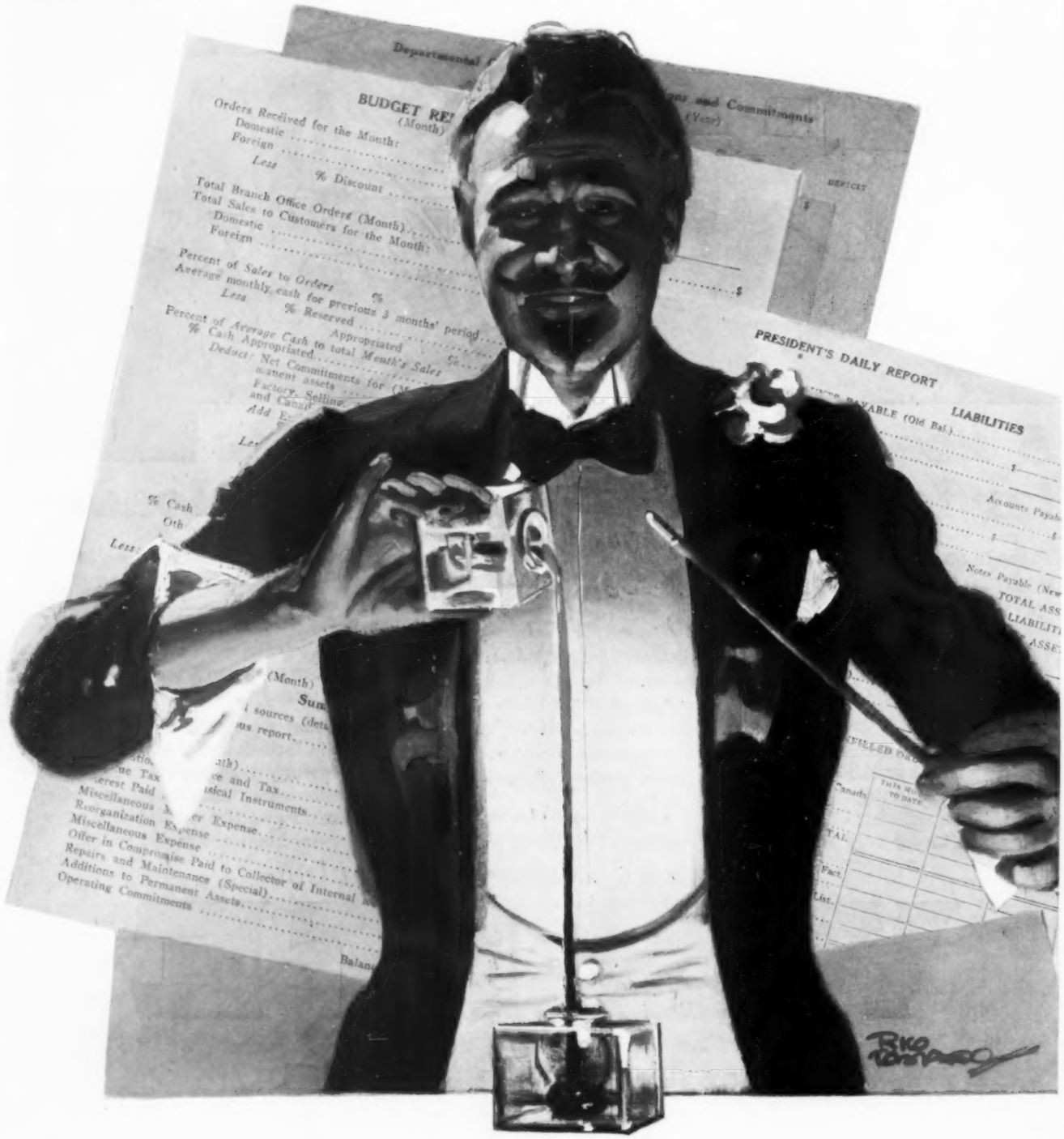
A COMPLETE LINE OF FOUR AND SIX CYLINDER

TRUCKS
BUSSES

"BUDGETARY CONTROL"

The Magician that turns RED *ink into* BLACK



THE EMANCIPATION OF THE AMERICAN BUSINESS MAN

FOR YEARS, JOHN SMITH, mass-production manufacturer, did business on the advice and counsel of Messrs. Hunch and Hazard.

He consulted his intuitions, took chances. Usually things turned out pretty well.

But came the day when his hunches began to back up on him. Sales costs mounted alarmingly—and he didn't know why. Operating expenses ran rampant—and he didn't know why. Somewhere in the business there were hidden chasms, hungrily swallowing revenue—but he didn't know where.

So he S. O. S.'d his banker. "What I need is more financing," he declared, "so I can do more volume. That will cut the overhead—and the red in the balance sheet."

"What you need," replied the banker dryly, "is the guidance and warning of more facts and figures. Scarlet fever in the balance sheet is usually due, so I have observed, to fact-and-figure malnutrition in business. You need a Budget Control."

. . .

There are times when even disappointing advice has to be considered. So Smith began in the Sales Department. Installed a *Visible* "Customer's Record" of the condition of every account in the house. With this new system, displaying every customer's name and transactions in plain sight, he had only to run his eye over the edges of the record to see at a glance who was buying and how often—and who wasn't and how long since. The vivid color signals flashed the whole story of each account.

Every day's figures . . .* every *day!

But equally important was the daily digest of sales information which the new fact-and-figure-gathering machines and systems automatically brought to his desk. A "break down" of sales-totals for the day, the month, the year, by items, models, prices and colors. Thus he got a constantly up-to-date and accurate picture of sales trends, pocketbook appeals, style preferences and changing tastes.

With these semaphores of demand to guide him, supplemented by sales estimates from his salesmen, managers, and dealers, he was able to formulate an intelligent and a reasonably safe Sales Forecast for the coming year, a dovetailed production schedule and a proper allocation to each department of expenses and income.

The composite of these forecasts, he called his *Budgetary Control*.

And so he began sailing his ship by the compass of reliable information instead of by his wits and the stars.

And vermilion changed to ebony!

At the end of the first year, the vermilion in the balance sheet had been changed to a healthful ebony. Inventories were almost nil. Waste and extravagance showed up as infinitesimal. For whenever any department had stepped out of line with the Budget, his daily statement showed it—and he promptly probed for the trouble.

. . .

Today it is comparatively easy for any business to install and enjoy the intelligent guidance of adequate facts and figures. Automatic machines and systems are available for making lightning records, tabulations and digests of all the statistics, operations and transactions in any given business.

If you feel the need of skilled and unbiased counsel on any feature of your fact-and-figure gathering business equipment—or even if you merely seek to make sure you are right in every detail of your present office systems and machinery—please feel at liberty to call on Remington Rand!

The services of a Remington Rand Business Analyst, to confer with you in your own business, are yours for the asking—with no obligation entailed on your side.

His counsel will be unbiased. For Remington Rand men are not special pleaders for any particular device or system. Remington Rand is centralized headquarters for the best of *all* office equipment and machinery.

Simply write or 'phone to the nearest Remington Rand office.

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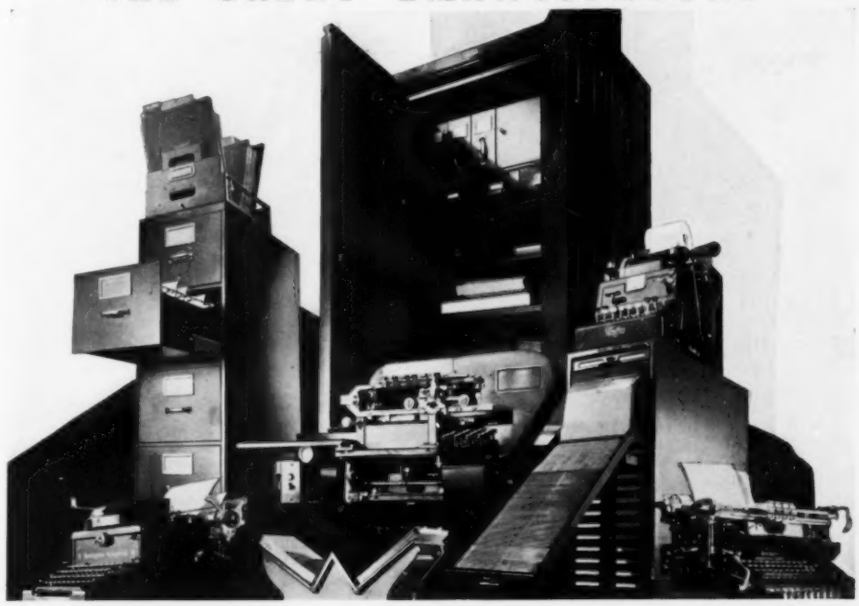
THE GREAT EMANCIPATORS



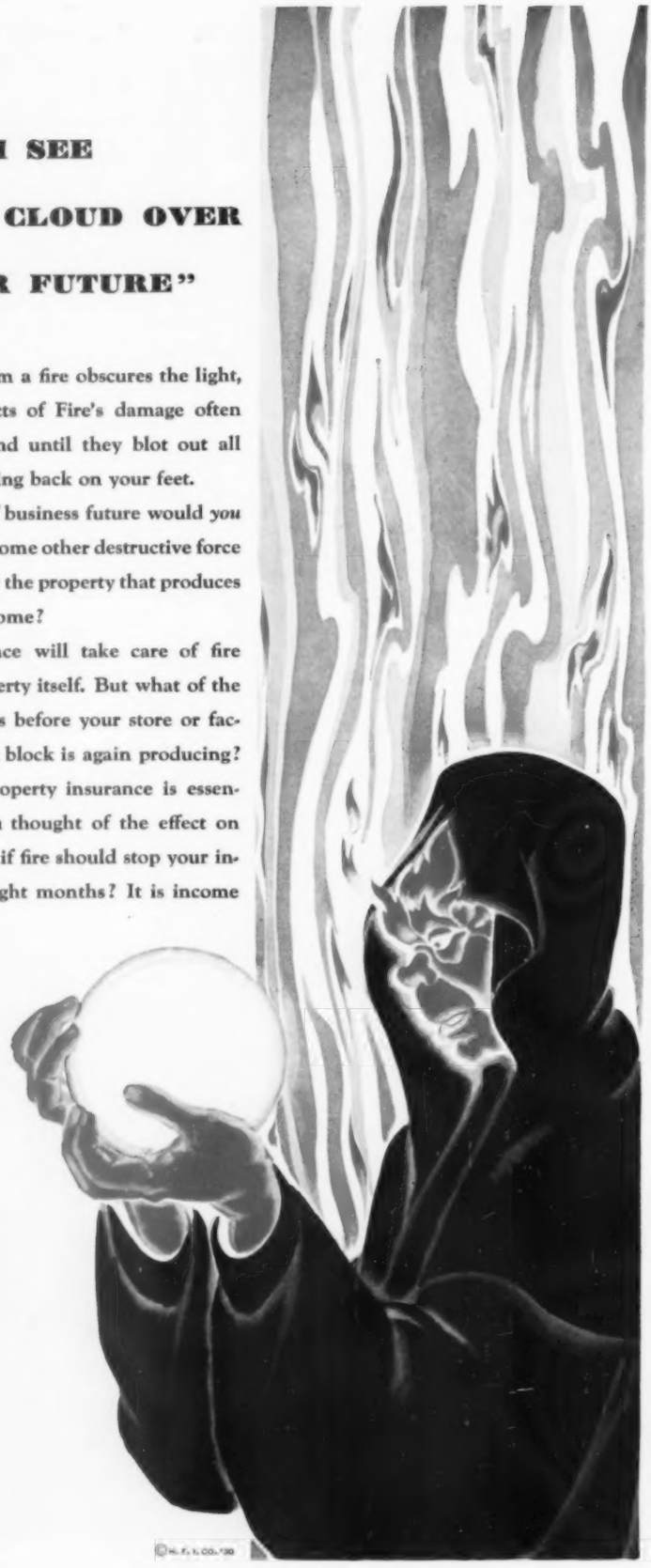
"I SEE A DARK CLOUD OVER YOUR FUTURE"

As the smoke from a fire obscures the light, so the after-effects of Fire's damage often spread and expand until they blot out all hope of your getting back on your feet.

What sort of business future would *you* have if fire . . . or some other destructive force . . . should destroy the property that produces your business income?

Fire insurance will take care of fire losses to the property itself. But what of the costly idle months before your store or factory or apartment block is again producing?

Adequate property insurance is essential, but have you thought of the effect on your business . . . if fire should stop your income for six or eight months? It is income that makes your profits, pays your employees, meets your fixed expenses.



There's a dark cloud over the future of any business that stands to lose its profits, its orders on hand, its ability to keep its working forces together . . . because of Fire.

It's good business to look this question squarely in the face. The Hartford Agent* near you can give you some figures and facts that will startle you. Maybe it's disconcerting — but isn't *this* the time to be disconcerted — when you can *do* something about it? *Individualized insurance,* as applied by the Hartford Agent, fits every special need of your special case. It meets intelligently and accurately the various stunning losses that Fire can deal your business.

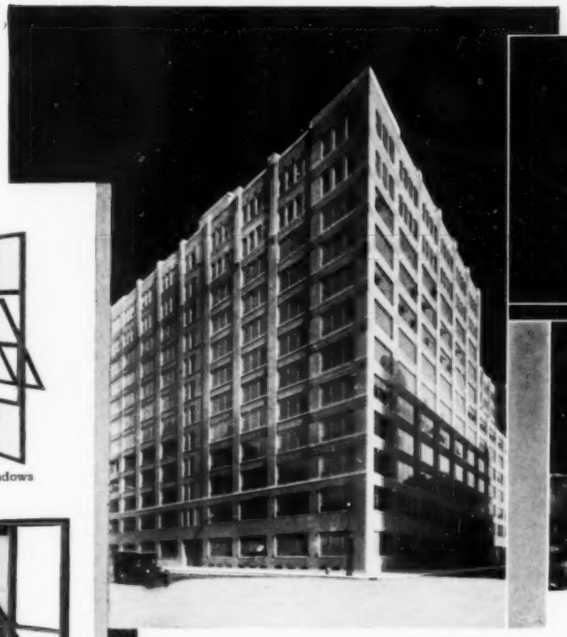
It's good business, too, to deal with an experienced insurance man in this important matter — a man backed by a sound, strong and well-managed stock insurance company.

THE
HARTFORD FIRE INSURANCE COMPANY
AND THE **HARTFORD ACCIDENT AND INDEMNITY COMPANY**

WRITE PRACTICALLY EVERY FORM OF INSURANCE EXCEPT LIFE

***If you do not know his name look under "Hartford" in your telephone book. If he isn't listed write the Hartford Fire Insurance Company, Hartford, Connecticut.**

United States Appraisers Stores, New York City. Archts. Buchman & Kahn, New York City. Builders—Shrodder & Koppel, New York City.



Wilshire Tower Bldg., Los Angeles, Calif. Gilbert Stanley Underwood, Archt., Los Angeles; H. W. Baum Construction Co., Contrs., Los Angeles.

Montgomery Ward Co., Ft. Worth, Texas. W H. McCaully, Engr. Thomas S. Byrne, Contractor.

Pivoted Windows

Pivoted Windows Screened

Proje... A...

Case...

Airport Doors

WHEN *only the best* WILL DO...

PERSISTENT striving for the best . . . for new features of design . . . for improved products—this has been the policy of Bayley Steel Windows and

District Offices
NEW YORK
67 W. 44th St.
BOSTON
5 Park St.
CHICAGO
75 E. Wacker Drive
CLEVELAND
449 Terminal Tower

BAYLEY
STEEL WINDOWS & DOORS
Sales Agencies also in Principal Cities

District Offices
WASHINGTON
1427 I St., N. W.
ATLANTA
407 Bona Allen Bldg.
SPRINGFIELD, O.
North St.

[*Continued from page 94*]

BIG CONTAINER MERGER

Who.—Container Corporation of America, one of the largest paper board companies in the U. S., owning twelve factories, six mills with a capacity of 1,200 tons of box board daily, employing 3,350 workers, showing a decrease in net income of $172,677 for 1929 under 1928 and a 30 per cent increase in sales, aggressive in its policy.

What.—Announced through its president, Walter P. Paepcke, the closing of negotiations for the acquisition of the assets of the Sefton Manufacturing Corporation, makers of folding boxes, and its subsidiary, Dixon Board Mills, Inc. The combined assets of the Container Corporation of America and its two new subsidiaries on January 1, 1930, exceeded $30,000,000.

Why.—Because overproduction in the paper board industries is so great and cutthroat competition so keen that leading companies realize that to make profits they must amalgamate. This is the first of important secretly planned amalgamations. Three years ago unsuccessful attempts were made to organize the industry.

Silver Market Said to Be "Cornered"

Who.—The three great silver exchanges of the world: Calcutta, Bombay, and London.

What.—Reacted on reports that Chimanram Motilal, Indian bazaar owner, had cornered Bombay's market by buying 2,000,000 ounces for immediate, 5,000,000 ounces for future delivery.

Why.—Two basic conditions have combined to produce a crisis. One of them is overproduction: the 260,000,000 ounces (estimated) of silver produced in 1929 tops all records. A drastically reduced demand is the other bearish factor. The greatest use of silver has always been for money. Recently India, which formerly took 30 per cent of the world's output, has been put on a gold basis; and the same change seems imminent in China, the last stronghold of silver money. Thus it is not surprising that the price of silver has never before in history (records have been kept since 1250 A.D.) been so low as now.

GENERAL MOTORS BUYS UP STOCK TO SHARE PROFIT

Who.—General Motors Corporation, largest earning corporation in the world.

What.—Bought 1,000,000 shares of General Motors common stock at a cost of about $35,000,000 to form the Second Managers Securities Company, successor to the Managers Securities Company, formed in 1923.

Why.—Eighty executives owned an initial $5,000,000 in the old company. The new company will bring twice that number into partnership with the corporation.

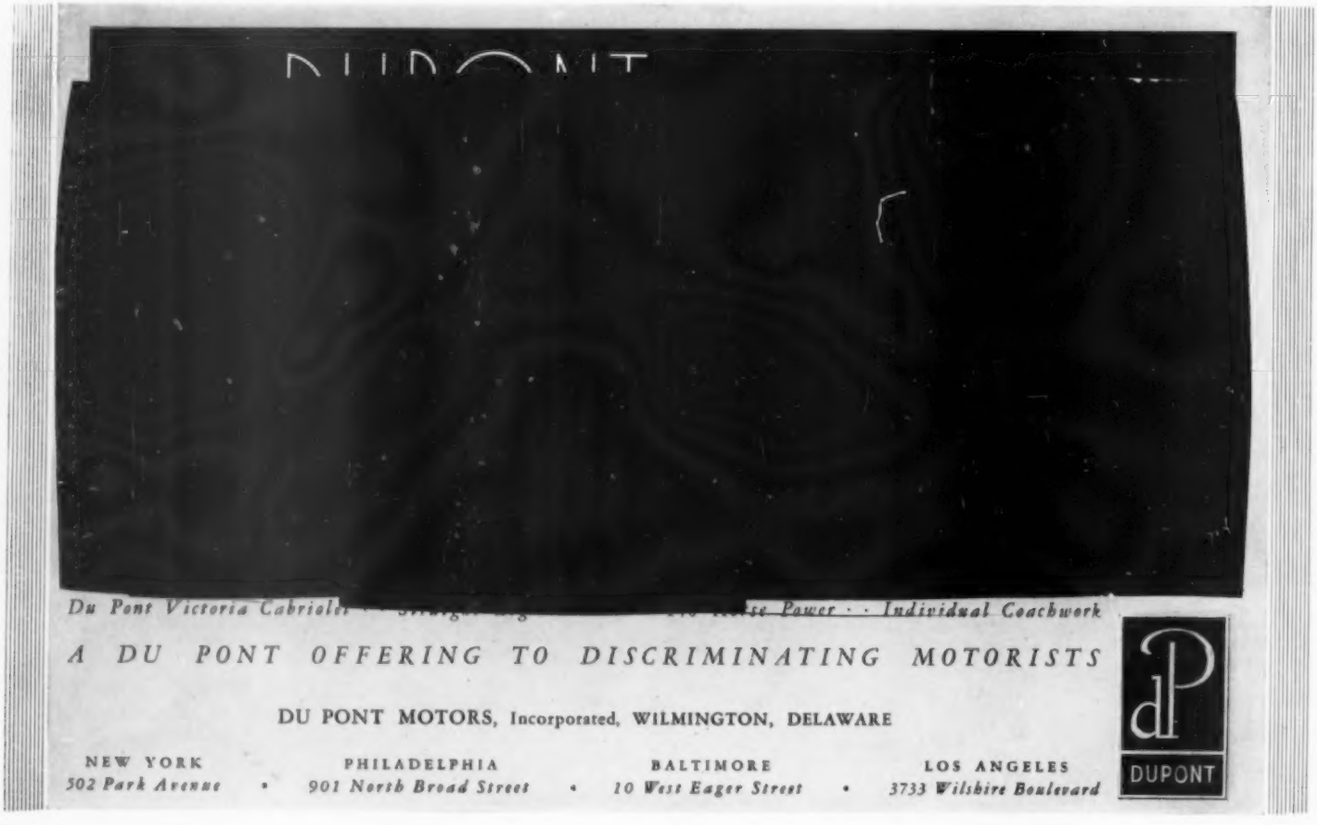
LOAN FOR SIEMENS ON MARKET TODAY

Who.—Siemens & Halske A. G., rival of A. E. G. (Allgemeine Elektricitaets-Gesellschaft) in Germany's electrical industry, and largest electrical equipment company in Europe.

What.—Borrowed (through Dillon, Read) $14,000,000 in debenture bonds, from the U. S. public for a term of 1,000 years. General Electric (which owns 30 per cent of A. E. G. stock) will own a large block. The thousand-year maturity makes the bond practically perpetual. Bond perpetuity is not unprecedented. Many a British Railroad issue, British Government consols, and an issue of the Canadian Pacific have no maturity date. Elmira & Williamsport R. R. Co. (Penn system) has a 999-year bond issue.

Why.—"To strengthen its finances for future tasks." Siemens & Halske, founded in 1847, now employs 139,000, has vast factories in Germany at Berlin and Nuremberg, outside of Germany at Vienna, Bratislava, Prague, Milan, and Cornella (Spain).

[*Continued on page 126*]


Du Pont Victoria Cabriolet
Individual Coachwork
A DU PONT OFFERING TO DISCRIMINATING MOTORISTS
DU PONT MOTORS, Incorporated, WILMINGTON, DELAWARE
NEW YORK 502 Park Avenue
PHILADELPHIA 901 North Broad Street
BALTIMORE 10 West Eager Street
LOS ANGELES 3733 Wilshire Boulevard
DUPONT

THE SYMBOL *of* INSULATION EFFICIENCY

FROM every corner of America have come enthusiastic receptions of Weatherwood!* . . . *the only insulating board fabricated from hardwood.* And already the Weathercock . . . *symbol of insulation efficiency* . . is a recognized value mark and buying guide throughout the nation.

Weatherwood! *It insulates against unfriendly weather,* winter and summer. It is *all wood* . . . strong *hardwood* fibers made into sturdy, full half-inch insulating boards. Weatherwood Lath! . . . perfected insulating plaster base, with the exclusive tongue and groove joint that protects the plaster finish.

The Weathercock identifies this superior board and lath. It also identifies the selected lumber dealers who sell it . . . dealers who are sincerely interested in giving you *higher* insulating value and *greater* structural strength . . . for new houses and modernizing old homes.

Ask your lumber dealer about Weatherwood, or write for sample and booklet, "The *New* Standard of Home Construction." Write for it today.

CHICAGO MILL AND LUMBER CORPORATION
111 WEST WASHINGTON STREET
CHICAGO · · · · ILLINOIS

Weatherwood

INSULATES AGAINST UNFRIENDLY WEATHER

★ Weatherwood is manufactured and marketed exclusively by the Chicago Mill and Lumber Corporation. This company, with its vast research and strong financial resources, has been engaged in the production and distribution of lumber products, wood packages and commercial veneers since 1881—almost 50 years. Its resources include tremendous acreage of hardwood in the states of Louisiana, Arkansas, Mississippi, and North Carolina, sufficient to insure a perpetual supply of raw material for Weatherwood, strategically located for economical and quick distribution. Together with its associated companies, it enjoys an annual business in excess of thirty million dollars. Over fifty-seven thousand freight cars were utilized last year to fill the transportation requirements of this business.

THE WORLD'S MOST FAMOUS
(*and most imitated*)
PREPARATION FOR THE HAIR

Thick, luxuriant, dandruff-free hair . . . a scalp tingling with healthy vitality—this unique French compound worked out by Monsieur Edouard Pinaud some eighty years ago, is promoting both of these throughout the world today.

And no matter where you go you can find imitations of it on sale . . . imitations made without even the faintest idea of what the Pinaud formula really is . . . imitations whose makers know only that somehow the Pinaud formula does do marvelous things for the hair—and that almost any kind of concoction can be marketed (for a while, at least) if put up in a similar bottle with a label that looks something like Pinaud's Eau de Quinine.

That is why it will pay you to look for the name Pinaud when you buy Eau de Quinine—for just as imitators cannot copy the Pinaud formula, they *dare* not copy the Pinaud name.

For 150 years the House of Pinaud has been proud to offer the world just such products as this—products perfected often after decades of effort, with a superb disregard of time, of cost. Look for them at your favorite drug or department store.

Pinaud
PARIS · NEW YORK

© Pinaud, Inc., 1930

[*Continued from page 124*]

Du Pont Group Invades Field Of Natural Gas

Who.—Directors of Missouri-Kansas Pipe Line Co., purveyors of natural gas to towns in Texas, Missouri, and Kansas.

What.—Elected Francis I. du Pont to their board, verifying reports that the du Ponts are financially interested in the natural gas industry. Chemically the same as "marsh gas," which rises at night from stagnant pools, methane (natural) gas is found in usable quantities by drilling near oil wells. Fifty years ago these wells, considered devil holes, were conscientiously set afire. Within the last ten years, the use of natural gas as a fuel has increased 104 per cent. Two billion dollars are invested in the industry, and 80,000 miles of gas pipes lead out of U. S. oil fields. Missouri-Kansas controls 250,000,000 cubic feet of gas, has laid 675 miles of pipe, plans 1,000 more miles in Oklahoma.

Why.—Du Ponts, alert since 1802 to all scientific-industrial developments, began in 1928 to invest in Missouri-Kansas, stamped their approval last month in the words of Francis I. du Pont: "I am well satisfied with the business done in the past, as well as with the company's plans for the future."

TAXICAB AWARD SHIFTED.

Paramount Replaces Yellow at the Pennsylvania Station.

Who.—The Yellow Taxi Corporation of N. Y., annual lessees of the Pennsylvania terminal cab concession.

What.—Voluntarily withdrew its service from that point, to be succeeded by the Terminal Cab group, recently affiliated with General Motors in the cab field, popularizing Paramount and General cabs.

Why.—The concession price, lowered at Yellow's intervention two or three years ago, was reputed to have been raised. The franchise business, calling for a minimum of 750 available cabs and providing the U. S. greatest daily trip total (between 6,000 and 8,000 calls), gives proportionately small returns. The average trip is short, nets 40 cents.

"SEELBACH" IN LOUISVILLE SOLD BY CHICAGOANS

Who.—Liebling Realty Company of Chicago.

What.—Sold to the Eppley Hotels Co. of Omaha, the famous Seelbach Hotel in Louisville.

Why.—To extend the Eppley chain, to modernize to the extent of $500,000 Louisville's historic, ten-story, 420-room, downtown hostelry.

RETAIL GROUPS IN FURNITURE FIELD COMBINE

Who.—Hugh A. Murrill, president of the Furniture Associates, Inc.

What.—Announced at the American Furniture Mart in Chicago the formation of his company by the merging of the Furniture Associates, Inc., of Charlotte, N. C., and the Century Furniture Associates, Inc., of Oil City, Pennsylvania. The new $20,000,000 organization will be the largest single unit of retail chain furniture stores in the U. S., will spend $1,000,000 this year in newspaper advertising.

COAL OUTLETS SOLD TO VAN SWERINGENS

Who.—The railroading Brothers Van Sweringen of Cleveland.

What.—Organized the Pittston Company, a coal distributing system to cover New York, Hoboken, Boston, and environs, consolidating the United States Distributing Corporation, Stephens Fuel Company, Inc., Owens & Company, F. J Kerner Coal Co., Inc., and Prospect Coal Company.

Why.—To provide the Erie Railroad properties with distributing outlets, to avoid conflict with the recent I. C. C. ruling prohibiting trucking by railroads in Manhattan.

DIVIDENDS

MANUFACTURING profits, with which to pay dividends, are wrung today from improved methods that originate in stop-watch attention to details in every department of business.... Concerns that loom large in industry, after working with General Box Engineers, have found their shipping rooms to be mines of profits in the form of savings.... The satisfactory box or crate today must be specially and carefully designed to deliver its particular load in good condition *at the minimum of total cost.* What General Box Engineers have saved for hundreds of manufacturers they likely can save proportionately for you. Their services and the use of our two box laboratories (one East, one Middle West) are offered to you cheerfully. We invite you to consider your own shipping problems with us.

GENERAL BOX COMPANY

44 WEST ILLINOIS STREET • CHICAGO ILLINOIS

A GREAT NUMBER of business firms today are using the finest letterhead they can buy—as an investment in prestige—for important correspondence ...An increasing proportion of them hold that *any* letter going out over the firm's signature comes under this head.

Crane's Bond is a 100% new white rag paper. Its outstanding quality and distinction makes it a valuable asset in building prestige and good will. And its extra cost is so slight as to be hardly worth consideration.

CRANE'S BOND

for letterheads and envelopes

CRANE & CO., Inc. · DALTON, MASSACHUSETTS

Fortune

A Letter, An Editorial

Among many letters and editorials concerning FORTUNE, two have unique interest:

1. *A letter from Owen D. Young, who has been voted by students of the Harvard Business School "the one outstanding American businessman."*
2. *An editorial in the Daily Princetonian written by one who has yet to begin his business career.*

The Letter—

I am so overwhelmed by the first number of FORTUNE that I scarcely know that to say. So far as I know, only art and sports have heretofore developed a magazine of such beauty and distinction. Such "books-in-parts," as Alkens, and various art publications about that time and later, were supported by a small percentage of the population in England, known as the aristocracy, lifted on the shoulders of the rest.

Now FORTUNE appears to give its fascinating picture of the beauty and power of business. What does that mean? Perhaps it means that the all-embracing term "business" may be drawing to itself the fine spirit of sportsmanship and the beauty of the arts. Then too, the magazine will not be the spokesman of the few lifted on the shoulders of the many, but will reflect this great coöperative effort known as business which is every day learning that its highest success can only be attained by making everybody healthy, wealthy and wise.

I congratulate you on the initial number of this great adventure.

New York City — OWEN D. YOUNG

The Editorial—

Big Business, Advertising, The Machine might, any one of them, be chosen to characterize these expansive times in which we live. For the first time, a business man sits in the White House; he is surrounded by business men, his assistants and counselors; eminent financiers and industrial leaders cross continents and sail the seas to represent him. Business is the life-blood, the very soul, of American civilization.

There has just been issued the first copy of a new monthly which purposes "to be the log-book, the critical history, the elaborately illustrated record of Twentieth Century Industrial Civilization," to fulfill "the greatest journalistic assignment in history." *Fortune*, although heralded with extravagant superlatives, has not disappointed us; on the contrary, we are amazed and delighted with the first copy. Its physical bulk (three pounds, 184 pages) is astounding, but far from being clumsy, it incredibly has grace and delicacy in profusion.

Like Pallas Athene, *Fortune* sprang fully armed from the brain of its creator *Time*. It shares that indispensable weekly's incalculable facility for ferreting out the elusive but significant facts and for presenting them in a brilliant, energetic style. It is not concerned with market tips, or even less with stock fluctuations. These are, as many a hard-bitten American is realizing, absurd and capricious surface manifestations which have small direct contact with the placid depths of business.

Fortune is lavish in color and photography and far outdistances, in its first issue, any other magazines in its pretensions to being "the most beautiful." It is the very genius of advertising, orchestrating in a tremendous symphony the varied strains of "the oldest of the arts and the newest of professions."

Vivat, floreat, crescat Fortuna.

A few copies of Vol 1, No. 1 (February, 1930) remain. These will be sent to new subscribers in order of application. The subscription price is $10 a year.

Address subscription orders to FORTUNE, *350 East 22nd Street, Chicago, Ill.*

TIME, *Inc., Publishers of* FORTUNE *and* TIME, *The Weekly Newsmagazine*

...only 10¢ ...how can it cost so little?

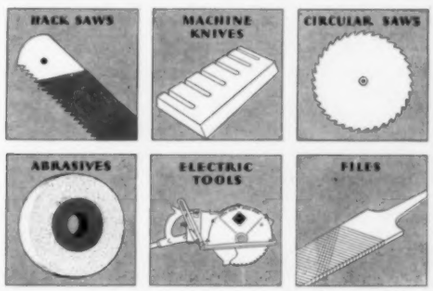
Simonds cutting edges and modern methods guarantee greatest value

NOWADAYS you can step into almost any store and buy dozens of articles that cost so little yet serve so well. Quantity production methods coupled with Simonds products guarantee to manufacturer and to user the utmost in merchandise value.

It has been the privilege of Simonds Industries to work with hundreds of manufacturers in developing cutting edges indispensable to modern quantity production. Operations that once took hours now take minutes—and production costs have been reduced proportionately.

For every material that must be cut and finished—wood, steel, iron, brass, fibre, the new alloys and the modern products of chemical science—Simonds has perfected cutting tools which defy the toughest cutting jobs. Because of their high dependable quality, Simonds cutting edges lower costs... simplify and help standardize factory operations.

Eight Simonds factories, a steel mill, 15 sales branches and a nationally distributed system of service stations await your call to serve.



SIMONDS SAW AND STEEL COMPANY

Boston . . Mass.
Memphis . Tenn.
Seattle . . Wash.
Chicago . . Ill.
Detroit . . Mich.
Portland . Ore.
New York . N.Y.
New Orleans . La.
Atlanta . . . Ga.
San Francisco . Cal.
Los Angeles . Cal.

Established 1832 · · FITCHBURG, MASS.
Producers of Circular, Band, Metal, Cross-Cut, Gang and Drag Saws... Machine Knives... Files... Hack Saw Blades... Tool Holder Bits... Saw Tools... Discs... Steel.

AFFILIATED COMPANIES

WAPATT, INC., PITTSBURGH, PA., *Manufacturers of Portable Electric Saws and Tools* ~ THE ABRASIVE CO., Phila., Pa., *Producers of Abrasive Grinding Wheels and Polishing Grain* ~ SIMONDS GUARANTEED CUTTER-HEAD CO., Seattle, Wash. *Manufacturers of Guaranteed Cutter-Heads.*

SIMONDS INDUSTRIES
World's Largest Saw Makers

BACK OF THE EDGE..THE STEEL . . . BACK OF BOTH..SIMONDS

XUM

36 holes a day isn't enough exercise!

Enough golf. Not enough exercise. Fine to keep your waist-line in shape. Not specialized enough to keep mouth and teeth healthy. What they need is Tek-*sercise* with a Tek tooth brush. Here's the way:

Take Tek by the shaft. Comfortable grip, hasn't it? Start brushing. Feel the spring in the bristles. Tek is small and nimble, reaches all the teeth. Your gums begin to tingle with health. That's the automatic part of Tek-*sercise*. While you clean your teeth, the extra width of Tek's brush-head stimulates your gums.

Get a set of Tek brushes today. Perfectly matched in brushing ability. Differing only in their handles. One contains dental floss ready for use. Product of Johnson & Johnson, world's largest makers of dental and surgical dressings.

Johnson & Johnson
NEW BRUNSWICK NEW JERSEY

Tek
the modern
TOOTH BRUSH

You need two brushes, say dental authorities, one for morning, one for evening. This assures dry, efficient bristles. Tek handles are made in six colors, of Lucite or amber. For the children, Tek, Jr.

Diamond v. Emerald, Ruby & Sapphire

[*Continued from page 51*]

Consideration of the corundums is complicated by the fact that it is in these stones that star formations (asterisms) frequently appear. This phenomenon of a star-shaped radiance on the surface of a stone is produced by light refractions from a minute system of hollow tubes running at an angle to its axis. The stars vary in intensity and perfection of form. At their best they lend a special beauty to stones which may be greatly desirable according to taste. But between fine starred and fine plain corundum there is, on the average, little if any difference in price. Asterism is popularly considered a variation rather than a superiority.

The diamond

An examination of the diamond provides the crux of the discussion. In one respect it is unquestionably more desirable than any other stone—it is the most durable of them all. However dangerous and exacting its beauty may be, however ritualistic rather than considered its popularity, it is as nearly as any substance a permanent buy. Whereas diamonds are to be found in many colors—black, yellow, orange, green, brown, blue, flame, and eight recognized shades of off-color "byes"—fashion accords its favor only to the pure white and blue-white stones. Nor is this due to the fact that certain colored diamonds are not costly and desirable. Quite the contrary—splendid samples of red, blue, and green diamonds are so rare that the discovery of one is an event even in a sphere of rarities, and its price is, accordingly, prodigious. These few illustrious gems can in no sense constitute a commodity, hence the public must forego them for blue-white and white diamonds, just as all but the wealthiest collectors of paintings forego the pleasure of owning a Velasquez or a Raphael. We may thus omit these amazing jewels from our consideration.

The gem fancier will probaly obtain much less pleasure from a big, white, flawless diamond than he will from a similarly fine specimen of the ruby, emerald, or sapphire, regardless of comparative costs. Why? In the first place, white diamonds are plentiful, big diamonds are a commonplace, perfect diamonds are not hard to seek and a combination of these attributes of fine color, large size, and perfection of texture is by no means the rarity in diamonds that it is in the other stones. Second, and most important of all, is the fancier's acute realization of a situation of which few diamond owners are aware—the entirely artificial control of diamond prices. Were it not for the shrewd activities of a trust which makes Colombia's control of emeralds seem like a pygmy venture, diamonds would, figuratively, cascade all over the world and their prices would tumble until the sapphire, generally the cheapest of the "precious" quartet, became a relatively prohibitive stone.

The operations of this trust are too pri[illegible] to permit of statistical analysis, but a description of diamond sources in some measure explains its operation and gives an idea of its magnitude.

The Golconda mines of India, whence came such apocalyptic gems as the Kohinoor, the Regent, and the Great Mogul, have long since been exhausted craters. Minas Geraes in Brazil had a magnificent yield in the 18th century but today produce largely inferior yellowish "byes" and black industrial carbonado. During one period the natives of Borneo went Bradyesque with diamond-buttoned coats, so plentiful were the gems, but the current Bornean product is "melée" (under one-sixth carat) and flame-gold in color.

The syndicate

The diamonds that adorn the windows of the best jewelers and bring the highest prices in world-wide markets are mined almost entirely in South Africa. The great mining town of Kimberley rests above a vast underground volcanic system of mud, vestige of a prehistoric lake, which contains tons of "blue ground" or kimberlite, shot with diamonds. Here, where the British outnumbered the Boers, four great mining companies coöperate for mutual benefit under the name of the Diamond Syndicate. De Beers is the oldest and largest. The ground controlled by Premier produces the most flawless diamonds. Southwest Protectorate (British and American capital) and Jagersfontein, least extensive of the four, make up the list. They all began in the seventies after a small Dutch boy had picked up a fragment of stone (1867) which surprised and delighted one of his elders. The his-

You're going somewhere when you go with

Camels

The road to pleasure is thronged with smokers who have discovered the superior fragrance and mellow mildness of this better cigarette.

© 1930, R. J. Reynolds Tobacco Company, Winston-Salem, N. C.

Te-pe-co *Bathrooms in Color*

THE utmost in sanitation. The utmost in charm of design. And *now* the utmost in beauty of color! Surely, with so much to recommend them, there is little wonder that a nation-wide enthusiasm for Te-pe-co Vitreous China and Porcelain Plumbing Fixtures grows greater every day.

Architects, who plan the finest of homes and owners who occupy them, are making the most of the popular color trend with products of Trenton Potteries Company manufacture.

The beautiful bathroom above serves to illustrate but one of the many distinctive variations made possible by Te-pe-co Fixtures.

Makers of Te-pe-co Fixtures—and users of Te-pe-co Fixtures—are not satisfied with color *only*, but *only color at its best.* And *all* Te-pe-co Fixtures, *white* or *colored*, carry the same guarantee of quality and durability.

THE TRENTON POTTERIES COMPANY
Trenton, New Jersey, U. S. A.

National Exhibit Rooms
101 Park Ave., New York City
Entrance on 41st Street

Export Office:
115 Broad St., New York City

Sales offices in
Philadelphia, Boston
and San Francisco

THE TRENTON POTTERIES COMPANY
TEPECO
TRENTON, N.J. U.S.A.

Our Guarantee

The Trenton Potteries Company makes but one grade of ware—the best that we can produce—and sells it at reasonable prices. We sell no seconds or culls. Our ware is guaranteed to be equal in quality and durability to any sanitary ware made in the world. The TE-PE-CO trade mark is found on all goods manufactured by this Company and is your guarantee that you have received that for which you have paid.

A copy of "Bathrooms of Character" Edition J—together with color chart showing the various tints and grainings of Te-pe-co ware, will be forwarded upon receipt of 10c in postage.

TE-PE-CO
All Clay Plumbing Fixtures

tory of the Syndicate includes numerous crises when competition threatened from the Congo, Namaqualand, and odd spots in the Transvaal. Inferior but abundant diamonds had to be bought by the Syndicate from smaller firms. Finally the South African Government, in one stroke, rendered the Syndicate practically impregnable and itself opulent. Observing that independent, competing prospectors paid very small taxes and that the Syndicate's taxes were correspondingly large, the Government decided in favor of the latter, with the result that in 1926 a law was passed prohibiting further independent prospecting, confirming the holdings of the Syndicate, and securing for the Government an exceedingly large percentage of the income from all South African diamonds. Except for the government-operated Namaqualand fields, the Syndicate is now almost alone in its enterprise. All in all, South Africa furnishes the world with at least 90 per cent of its diamonds and exercises its virtual monopoly to tremendous effect.

The price

Jewel cutters in world-wide cities (Amsterdam, Antwerp, and New York are the centers) inspect and take options on made-up packages of stones sent from the mines. Their quality varies; some develop well, a few are flawed or broken in the cutting. The cutters price their finished product with due regard for the waste material. This is no small amount, since stones may be completely ruined in cutting and good cutters are rarely able to preserve more than 40 per cent of a rough stone in a single finished product. The retailer raises the price again, and his profit is a very considerable factor in the final cost to the consumer. This is necessarily so because he handles the most expensive property units in the world, the number of units is comparatively few, and the overhead expense is comparatively great with considerable chance for loss on the investment. His rate of stock turnover is sometimes as low as nine tenths a year. His advertising—averaging 3.4 per cent of sales—is higher than most, except that for women's wear. His rental averages 5 per cent higher than that of other retailers; the jeweler must maintain a stonily impressive establishment in keeping with the quality of his merchandise.

Thus anyone who buys any gem necessarily pays the miner, the cutter, the setter, and the retailer. But he who purchases diamonds not only supports these gentlemen, but obtains in return an artificially maintained rarity at an artificially maintained price. Purchasers might logically be expected to bridle at the thought that South Africa keeps the strings tightly drawn on bag after bag of reserve stones. But since most persons buy these gems with a social rather than esthetic attitude (a fiancée, a bride, a matron must have the "proper" diamonds), the demand continues, and since the Syndicate is safe as the South African Government and the Government seems reasonably secure, there is little likelihood, short of the discovery of new and vast diamond fields, that diamond prices will fall. Indeed, if it is wary and judicious, the Syndicate may bring about a gradual increase. On the other hand, if it should, of a sudden, loose upon the world a price-lowering shower of diamonds, the Syndicate might argue that it would be depriving the world of what it wishes to believe *is* a rarity and, therefore, desires. Cabell, one remembers, remarked *mundus vult decepi* (the world wishes to be deceived). In ultimate consideration, perhaps the Syndicate is merely catering to that human desire. The world wishes diamonds were a rarity. The Syndicate makes them so. Further it provides a modicum of happiness by supplying them to those who can afford the high price of rarities. Thus, perhaps, are both consumer and Syndicate enriched.

Safer than sables

The jeweler, on the other hand, argues that diamonds are not only beautiful but a sound investment. The South African fields might go the way of others, and diamonds rise to unheard prices. True, new fields might be discovered in China, Siberia, Brazil. But today, he would argue, the value of the stone itself is as safe as anything in this precarious age. A much safer investment, he might add to a customer, than a sable coat.

The gem fancier, however, attentive to true rarity, true desirability, may be pardoned if he scoffs at the cost of diamonds as the result of one of the most colossal inflations in the history of commerce. To him it may well seem that the "inestimable stones, unvalued jewels" are the colored gems, more variegated and far less supercilious in their beauties than the diamond, capricious and elusive prizes which are worth the chase, more exciting to pursue and to possess.

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DURING the competitive tests at Detroit preceding the 1929 National Air Tour, the stock WACO "225" that won the event set two new performance records. By three official stop-watches, it took off in exactly 4-4/10 seconds . . . landed and stopped in exactly 3-4/10 seconds. Measured in distance rather than time, that is *less than 100 feet!* ¶ Think of having a ship like that . . . a truly *practical* airplane. For no matter where you might be going, or how the country looked below, it is comforting to know that your WACO can be set down, if need be, in such a restricted space. ¶ And every phase of WACO "225" performance is comparable to its ability to get into, and out of, cramped spaces. Easy to fly . . . rugged and sturdy . . . and above all else, *dependable*...it has earned its right to rank with the greatest airplanes ever built. May we prove it to you?

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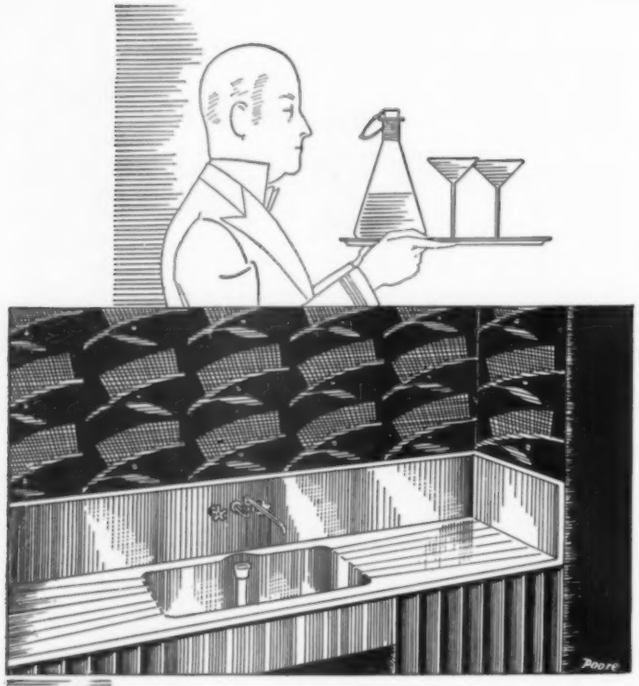

THROUGHOUT THE AGES, dining has been considered by cultured people as rather an event —a most important factor in the joy of living. But however amiable the company...however well provided the festive board...no dinner is a real success if the service is perfunctory. • The purpose of the new Butler's Pantry Sinks by Elkay is to so facilitate the preparation of fine dishes that your service may have the promptness and efficiency that marks a well conducted dinner. • A request to the Elkay Manufacturing Company for Catalog F-3 will bring you a descriptive brochure.

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Aluminum Company of America

[*Continued from page 71*]

lightness. Even the person least conscious of physics and least concerned with the formula that energy equals mass times the square of velocity can appreciate aluminum when energy is the muscle power of the rider, mass is the weight of the rider, and velocity is the speed that the exertion of muscle power produces. When the bicycle vogue vanished, only to be succeeded by the rise of the automobile, aluminum interests decided that the millennium had arrived and prepared to enlarge factories and increase production.

Unfortunately, however, the all-aluminum automobile was an illusion. There were many aluminum bodies used in early automotive days, and there never was any question but that the aluminum car was superior to the steel car in that it consumed less gasoline, wore out fewer tires, and lasted much longer. But as soon as the automobile went into mass production, as soon as it became a real factory job with price a deciding sales factor, costly aluminum yielded to less costly steel. On the Continent (where cars are taxed partly on their weight, and where the automobile owner expects to drive his car for ten or twelve years instead of knocking the gloss off and trading it in) the aluminum body is well established, but in this country it is to steel, not to aluminum, that the automobile has turned. Yet although the complete aluminum automobile proved a disappointment, aluminum did find a tremendous field in automobile parts. In pistons, for instance, both lightness and heat conductivity made aluminum an ideal metal, and the general automotive field today constitutes aluminum's largest single use.

From 1912 on, and especially during and after the War, aluminum made rapid progress, particularly through the development of high-strength alloys. Aluminum is correctly thought of as soft and easily bent, but heat-treated aluminum alloys (chiefly with copper) have a tensile strength equal to mild steel. The better airplane propellers are now made almost exclusively of aluminum alloy, although, much to the aluminum people's displeasure, even aviators themselves commonly talk of their steel "props." This confusion results partly from the fact that the Aluminum Company makes propellers in a semifinished form, then sells them to a propeller manufacturer who machines, finishes, and resells the products. Thus one Aluminum Company customer, the Standard Steel Propeller Company (since absorbed by Hamilton Aero Mfg. Co.), sold its aluminum-alloy propeller under the name of the Standard Steel Propeller, a title from which the Aluminum Company officials would gladly have removed the second word. Aluminum alloys are standard for dirigible frames, and one dirigible has recently been built with an aluminum (instead of a fabric) skin.

But although an air-minded public thinks first of aviation when (or if) it thinks of aluminum alloy, it is in the more prosaic land transportation and general industrial fields that these alloys have been most important. Indeed, a discussion of aluminum alloys brings us down to the Aluminum Company of the present, for the greatest contemporary development in aluminum is its application to structural forms. Such objects as channels, girders, I-beams, and other structural shapes have been traditionally sacred first to iron and then to steel. The perfection of heat-treated alloys gave aluminum the required properties for structural employment. It was then necessary to work out standards, specifications, and methods of shop practice for the making of structural aluminum. This tabulation of data was at length accomplished and in November, 1929, the Aluminum Company's works at Massena, in northern New York, went into operation on the making of structural shapes.

The potentialities of structural aluminum are almost fantastic. Railroad tracks, for example, will not stand much heavier loads than they now carry; at least partly aluminized must be the bigger and better trains of the future. Aluminum may lighten some of the load that skyscraper foundations of tomorrow will carry, although at present architectural aluminum is used chiefly in decorative spandrels, copings, and gratings. The navies of the world are extremely interested in aluminum, particularly since naval limitation agreements have put so much emphasis upon the displacement of battleships. A 10,000 ton aluminum cruiser, for instance, would be three times the size of a 10,000 ton steel cruiser. Of

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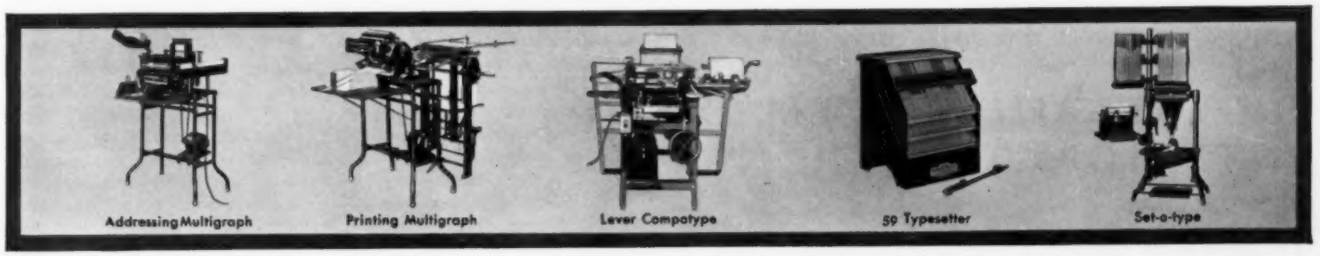

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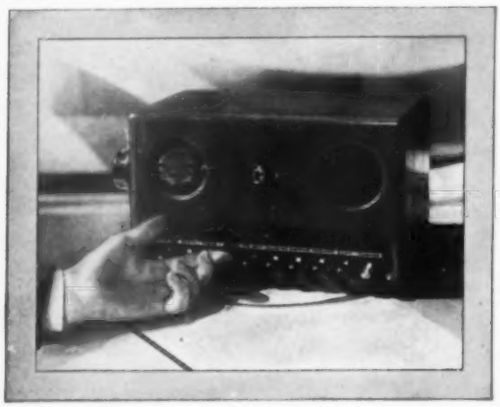

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The Modern Miracle of Business

course, such an all-aluminum cruiser could exist only in the pages of a newspaper Sunday supplement, and equally, of course, the naval limitators would be shocked and pained at what they would consider a tricky and unethical evasion of their limitations. Nevertheless, a specification is a specification and a pound is a pound, and certainly naval engineers are exhibiting an intense interest in the degree to which aluminum may be substituted for steel. Meanwhile, the Aluminum Company expects that in every structural field in which reduction of weight is an important factor (and it is a most important factor in every phase of transportation construction), aluminum structural forms will win a rapid acceptance and build up a gratifying tonnage.

Thus the Aluminum Company today, as in 1888, considers itself and its metal still in the beginning of their careers. Forty years is a brief time in a metal's history, especially in comparison with ancient copper and prehistoric iron. Constantly expanding, the business of the Aluminum Company is also constantly changing in character. As recently as over the three year period from 1926 through 1928 the business of the company (aside from its sales of aluminum to other manufacturers of finished aluminum products) found its greatest tonnage in transportation, especially automotive parts; in cables, particularly high tension lines carrying up to 220,000 volts; and in household products, including washing machines and vacuum cleaners as well as cooking utensils. Other important uses were aluminum-capped and aluminum-sealed bottles (containing everything from ginger ale to whiskey); aluminum foil, used to wrap candy bars, chocolates, food products of all kinds and also in the manufacture of shaving cream and tooth paste tubes; and powder, forming the pigment in aluminum paint, which, noncorrosive and highly reflective, is widely used for all outdoor and many indoor purposes. Aluminum paint is particularly valuable in the oil business as an aluminum-covered oil tank absorbs less of the sun's heat and prevents evaporation.

Tomorrow's development of structural shapes should result in a greatly increased use of aluminum in unit transportation, especially in motor trucks and street cars. The foil business will be tremendously increased if the cigar and cigarette manufacturers adopt aluminum-wrapped products for essential moisture-proofing. Aluminum furniture and architectural aluminum are just getting under way and to the growing aviation business, aluminum is, of course, particularly vital.

During 1928 the Aluminum Company showed a net income of $19,279,465; in 1929 it probably passed the $20,000,000 mark. In 1928 the domestic production of aluminum as given in *Metal Statistics*, published by the American Metal Market, was 198,414,000 pounds. Official 1929 figures have not been released, but will undoubtedly show an increase.

In considering the earnings of the Aluminum Company, it must be remembered that the total earnings are by no means entirely based on the sale of ingot metal any more than the earnings of the United States Steel Corporation are confined to a profit on ingot steel. Like the Steel Corporation, the Aluminum Company has fabricating mills, railroads, power companies, and other investments, all essential to its aluminum business and all contributing to the earnings. In the very early days of the company the earnings were based on the marketing of ingot aluminum alone. Today its earnings on ingot aluminum are only about one third of the total.

Owing to the company's policy of plowing earnings back into plant and equipment and writing off obsolete equipment, research, and development, the capital investment as of the end of 1928 was a little over $1.25 per pound of aluminum produced, or approximately $273,000,000.

The company currently shows approximately the same net income as its neighbor, the Westinghouse Electric & Manufacturing Company. It is hardly necessary to point out that its future rate of increase should be exceptionally high. Its stock is one which, perhaps more than any other, intrigues investment trusts because of the belief that substantially greater earning power might be shown were write-offs for development and obsolescence less conservative.

Thus the Aluminum Company and thus aluminum. Whether the monopoly indictment will die down with the completion of Mr. Mellon's tenure of office as Secretary of the Treasury is perhaps debatable: for some four years the Federal Trade Commission has been making inquiries concerning the company and its methods, and a Commission report is still awaited, though now, perhaps, not very breathlessly. As far as virgin metal production competition is

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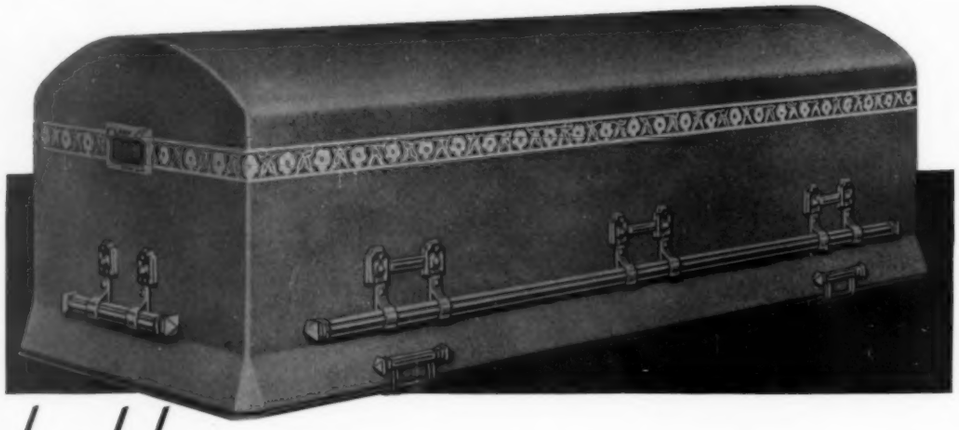

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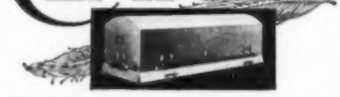

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concerned, the company has had no domestic competitors. Shortly before the War, a French company did plan a reduction plant in North Carolina, but the outbreak of the War brought an end to this competitive attempt. There is, however, a European aluminum combination or cartel, controlling a production of nearly 200,000,000 pounds a year. This cartel, however, does not seem to give Aluminum Company officials any great concern. They philosophically admit that overproduction abroad is bound to find the easiest market. A more important aluminum source of competition is the scrap market. As aluminum does not disintegrate, it retains its metal value. Indeed, aluminum scrap at about twelve to eighteen cents a pound, depending on quality, has a higher market value than new steel, and can be remelted and reused with entirely satisfactory results. Aluminum experts maintain that if aluminum were still marketed only for its early uses, the supply of scrap would be equal to the entire demand. To be sure, the Aluminum Company has been accused of attempting to corner the scrap market. This the company denies, and points out that even if it were so shortsighted as to attempt such a corner, the effort would be as impossible as attempting to control any other broad scrap supply.

Meanwhile, it must always be remembered that aluminum is constantly in competition with other metals. Just as aluminum kitchen utensils to some extent superseded tin pans, so now the new stainless steels are competing for the utensil market, although the Aluminum Company feels that aluminum's superior heat conductivity will enable it to hold its position. The aluminum products always face the disadvantage of a higher first cost (an important factor in preventing the Aluminum Company from pricing its pig according to fancy); nor are there many applications of aluminum in which some other substance will not serve with reasonably satisfactory results.

It is perhaps this intermetallic competition which makes the Aluminum Company itself so free from any feeling that it is a monopoly, at least in the invidious sense of the word. Insofar as a corporation may be said to have a personality, the personality of the Aluminum Company is expressed largely in its paternal attitude toward aluminum. The Aluminum Company official does not necessarily sleep on an aluminum bed or sit in an aluminum chair. He does, however, look upon aluminum as a father might regard an only child, which, nursed through a trying infancy, has developed into a sound and healthy adolescence. That the Aluminum Company of America does regard aluminum with a certain prideful air is undeniable. It considers its critics as those who, having had no hand in the building of the temple, are now engaged in carping at the finished structure.

Yet it must be admitted that aluminum has made, in a forty year period, an astounding progress. It must be also admitted that every step in that progress has been taken under the Aluminum Company's sponsorship and guidance. The Aluminum Company has undoubtedly been the laborer in the vineyard—a laborer who now feels himself well worthy of his hire.

Bullfighting, Sport & Industry

[*Continued from page 88*]

the shock of the initial charge of the bull. A general tolerance of infractions of this code exists, however, and this is further complicated by the practice of the *propina* or tip.

Horses and tips

Take the matter of the horses. This is to most Anglo-Saxons the most objectionable part of bullfighting. It is especially objectionable to Americans, always before they have seen a fight and sometimes afterwards as well. Yet most of the horses for the Spanish bull ring are furnished by the United States. The worst, worn out cab horses in Spain will bring $50. So the big horse contractors for the Spanish bull ring buy their horses in St. Louis where western horses can be purchased for as low, sometimes, as $5, ship them to Newport News and bring them to Spain direct, a shipload at a time. The bull ring horse contractor will at the same time buy mules for the Spanish army and I have one friend in the business who, as well as buying horses for the ring, buys polo ponies for the King of Spain. The fact, however, remains that the United States, where opinion

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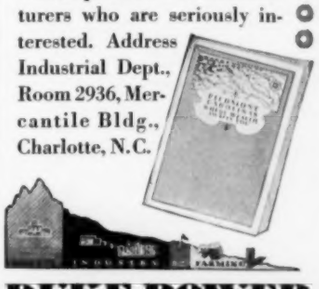

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deplores the use of horses in the bull ring, furnishes some 85 per cent of the horses used.

At various times attempts have been made to do away with the use of horses in the Spanish fights. They have all been unsuccessful. Without going into the technical causes, it is a question of having either horses or men killed. Men are liable to be killed in any event, but they are certain to be killed if horses are not used. The present Queen of Spain is an Englishwoman. When she married Don Alfonso and came to Spain she wanted to see a bullfight —but without horses. It was put on in private with real bulls, and after seven men had been carried to the hospital and the Queen had left the Royal Box, the two bulls still left to be killed were allowed to wait in the corrals to be brought out on another day when horses should be used and the general public admitted.

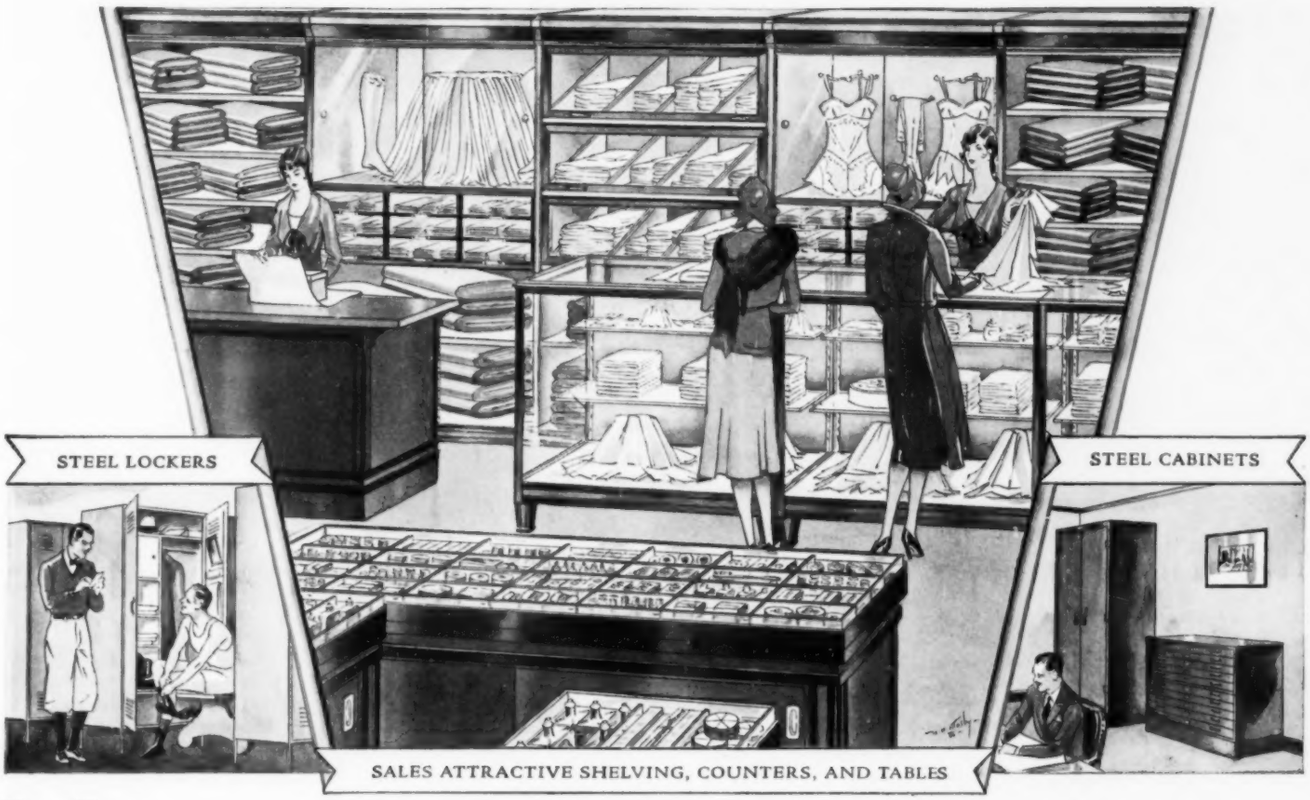
At present horses are protected by a sort of mattress which is hung over their chests, upper forelegs, and bellies. A horse protected by one of these mattresses can be wounded by a bull, but the spectators are spared the sight of the wound. Anyone who has ever been wounded knows that the pain of a wound does not come at once but from half an hour to forty minutes later. In the old days the public could see to what extent the horse was wounded and could, by their protests, force the horse to be killed at once. Now the wound is concealed to be sewn up in the corral. The wearing of the mattress, which was hailed by many people as a step in the humanizing of the bullfight and making it more acceptable to visitors to Spain is, in reality, a great blow against it.

The horse contractor furnishes the horses for a fixed sum—formerly, for a big fight, 2,000 pesetas ($296.60). There were required by law to be six horses on hand in the corrals for each bull which was to be killed. The contractor must have these horses on hand, but it is to his interest that as few of them are killed as possible, also that they should be of the minimum value possible. The horse contractor therefore gives a *propina* to each bull ring servant in order that he will do everything possible to avoid horses being killed, i.e., put out of their misery in the ring. The contractor also gives a tip to the picadors—the men who, of all men who take risks of life and death, are paid the worst, next to the soldiers, of course—in order that the picadors will take additional risks and accept horses which do not comply with the regulations as to height, size, strength, etc. It is to the existence of these tips that most of the visual horrors of the bull ring are due. The picadors, if they were well paid and trained and well mounted on big, solid, strong horses, could protect their mounts from the bull, and the tiring of the bull and the lowering of his head could be accomplished with no more danger to horses than they experience, for instance, in steeplechasing. A really fine picador will sometimes go through an entire afternoon on the same horse and never have his mount touched. The horse contractors have been most responsible for all the sights which have shocked northern people in their first view of a bullfight.

The men who make the money out of bullfighting are not the bull raisers, who are nearly all rich men before they become bull breeders, nor the promoters—last year in Spain out of 115 bull rings that gave major fights there were not a dozen rings that made any considerable money—but the matadors or killers. There are many reasons for this, but the principal one is that the matadors are organized.[5]

The Promoters

The lot of the promoters is very difficult. All bullfights take place in the open air. A serious bullfight in the rain is impossible, and a bullfight without sun is completely unattractive. Therefore the promoters are at the mercy of the weather. Because the bullfighter fills his dates up early in the year and because most bullfights are given on Sundays, legal or religious holidays, and during the months of August and September on the fixed Saints' days of towns, these Saints' days determining the dates of the local fairs, the promoter must sign the bullfighter to a contract at the start of the season. If the bullfighter is injured and cannot appear, the promoter must get a substitute and the substitute may not have the drawing power in gate receipts of one-eighth as much as the original fighter contracted for. Again, the bullfighter may be wounded and on going back to the ring after coming out of the hospital be in bad physical shape, or still under the impression of the goring he has received, and may take no chances at all, do nothing brilliant, and kill the bull how and when he can instead of artistically preparing and killing by the rules. So the promoter is at the mercy of all sorts of accidents. He has bought his bulls from the bull breeder, and perhaps something happens to them: they get hoof and mouth disease,



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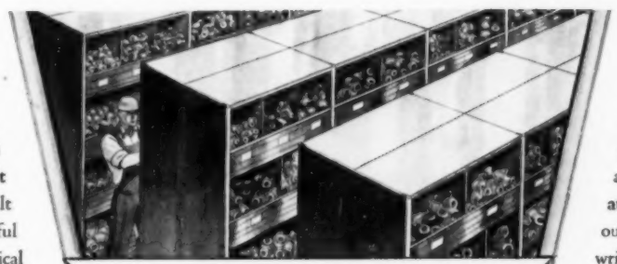

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Bridge furniture, chairs and tables separate, or in sets. Sold by leading department stores, furniture dealers, and gift shops.

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which was epidemic throughout Andalusia two years ago, and he sees them refused by the veterinary, or they may fight together in the corrals of the bull ring—they frequently do—and at the last minute he has to replace one or two. The promoter is in a bad way, too, because he usually does not own the ring but has to rent it from the municipality. The rings are usually put up for rent by sealed bids every five years or so. If the promoter has rented the ring for 30,000 pesetas a year, as was done at Málaga where the ring made money due to the popularity of two local bullfighters, at the end of five years the promoter may find himself bid up to 90,000 pesetas ($13,347) a year, one of his local fighters dead and the other useless, through fear and high living, as a drawing card, and the promoter himself facing five years of almost certain loss.

The promoters of the bull ring at Valencia, a rich city of over 200,000 people surrounded by the richest farming country in Spain with peasants coming in from the country each day for bullfights during Fair Week, gave eleven bullfights on successive days this last July in a ring which holds 16,851 people. On nine of the eleven days the ring was full. On four days there was not a ticket to be had by the morning of the fight. Two fights which were given with local matadors of the second category, who received less than half of what the first strong matadors were getting, drew only about 10,000 spectators each. Yet at the end of the eleven days of bullfighting, when every day but two the ring had been filled to capacity, the promoters were bankrupt. The reasons for this loss were the price they had been bid up to lease the ring; the exigencies of the matadors, who were popular favorites; and the fact that the most expensive first row seat at a bullfight at Valencia costs less than five dollars. That is all the public will pay for the best seats except at tourist centers like San Sebastián; if prices are raised they stay away.

Bull rings in Spain which make money are Madrid, where there is a big ring, a steady public of bullfight fans, many of whom have their seats subscribed for during the season, and a steady stream of tourists to attend the fights the regulars stay away from; Bilbao, where the seats are also subscribed, where the population has money and where the taxes are almost inexistent because the profits go to the local hospitals and charitable institutions; San Sebastián, where there is a rich summer colony and also Saint Jean de Luz, Biarritz and all the Basque coast to draw tourists from; Pamplona, where, because of the last survival of the old custom of running the bulls through the streets in the early morning, people come from all over Spain to spend bullfighting week and where, also, there is a big ring which is managed and kept tax free by the local poorhouse. These rings with, usually, Barcelona, Seville, Valladolid, Santander, always show a profit. But promoting bullfights in other Spanish cities is a gamble for the individual even though the local municipalities often make a subvention for the fights or fight in order to attract people from the surrounding country to the Fair Week.

Profits of the Matador

The people who get the money are the matadors. Take, for instance Marcial Lalanda who, last year, was the best, the most skillful, the most consistent and the highest paid matador in Spain. In 1924 the bullfight promoters organized to fight the matadors, whose demands were ruining their business, and agreed to blacklist any matador who demanded more than 7,000 pesetas, around $1,000, for killing two bulls. This sum was to include the pay of the matador and his team or *cuadrilla* of three *banderilleros* or cape and dart men and two picadors. These assistants are always paid by the matador and given their traveling expenses out of what he receives for the fight. The attempt to hold down the bullfighters' prices was broken by one man, Ignacio Sanchez Mejias, who demanded 12,000 pesetas for a fight and got it because he was popular, and ended by fighting sixty times that year in defiance of the promoters' organization.

Since then bullfighters' prices have not been controlled in any way by the promoters, and Marcial Lalanda this year gave eighty-six fights at an average price of well over 12,000 pesetas. This would gross him over a million pesetas. The price of the fights varied slightly and the exchange on the peseta also varied during the summer, but it is accurate enough and no exaggeration to say that Marcial Lalanda gave eighty-six fights at an average of $2,000 apiece. That gives him a gross of $172,000 against a gross for the season of $33,000 by the leading bull breeder. The bull ring at Pamplona, for instance, with all expenses paid but no charge made

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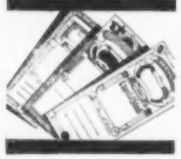

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Significant Figures from Financial Statement of January 1, 1930

Total insurance in force	$395,247,955.00
Total assets	4,184,607.00
Cash surplus . . .	1,951,815.00
Losses paid in 1929	1,143,694.00
Losses paid from organization to January 1, 1930 . . .	13,676,710.00
Dividends paid in 1929	826,001.00
Dividends paid from organization to January 1, 1930 .	6,856,196.00

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for depreciation, was said to have netted 200,000 pesetas or some $29,600 on the season, one of the most successful it has ever had. If Marcial Lalanda had wanted to go to Mexico for the winter, where there is an enormous ring and where the seats are sold in dollars, instead of resting after his hard season, he could have fought six times and earned an additional $25,000 net.

Next to Lalanda in point of earnings came Vicente Barrera with 66 fights; Felix Rodriguez with 63; Valencia II, 43; Nino de la Palma, 42; Villalta, 41; Marquez, 37; Chicuelo, 36; etc. All these bullfighters mentioned, except Villalta, lost many fights from horn wounds, and the fights they lost were divided among the other 53 matadors, who fought anywhere from 34 to 2 fights. There were six matadors in Spain last year who had only one fight. None of them received over 4,000 pesetas for their single appearance and it is safe to say that they had to give at least 1,000 of that to their aids and the manager who put them on the program, and the 3,000 pesetas that remain is all the money they made in the year of Our Lord 1929. There were thirty-one bullfighters, that is, officially consecrated bullfighters or *matadors de toros*, who made less than $4,000 last year. So it is not the bullfighters in general who make the money but rather the twenty or so who are in the first flight of their profession.

Out of the 12,500 to 15,000 pesetas ($1,853.75 to $2,224.50) that Marcial Lalanda receives from each fight, he must pay two picadors at 625 pesetas ($92.69) the pair, two *banderilleros* at 300 ($44.49) apiece, and another at 250 pesetas ($37.08). He pays his manager perhaps 250 pesetas ($37.08) for each contract that he signs for him, and this added to the expense of his team makes a total of 1,725 pesetas ($255.82), which he must deduct from the money he receives from each fight. He holds down traveling expenses by making all trips possible by motor car.[6] The bullfighters who in the height of the season must fight, for instance, at Santander one day and at Valencia the next, a train trip of over 40 hours, have been the greatest beneficiaries of the splendid motor roads that are being built all over Spain.

Leaving Santander after the bullfight and driving all night and the next day, the team of bullfighters arrives in Valencia at three o'clock in the afternoon in time to bathe, dress, and rest a short time before the fight. But it is unfair to the public, who pay to see a performance by men at their best rather than tired and stale after an all night motor trip. The bullfighter has one idea: to make all the money he can while he can, because he never knows when an accident, a slip, or an error of judgment may bring him a wound that will incapacitate him or, what is as bad, take away his courage. It takes a bullfighter half a dozen fights after he has been badly wounded to get his confidence back.[7] This has nothing to do with his fundamental courage—no man is a coward who goes into the bull ring—but a brave man may be so badly wounded that he cannot control his reflexes at the approach of the horn. Also when a matador has been badly scared he cannot kill well. He cannot profile in front of the bull's horns, make the bull lower his head to follow the red cloth held in the man's left hand, and, as the man goes in on the bull and the bull charges, put the sword in high up between the bull's shoulders. After he has been wounded, and until he gets his confidence back, he only gives a parody of the final encounter between bull and man. He shoves the sword in any way he can and the crowd throws all available objects at him. After the matador has been wounded, and until he has his nerves back, he does only one thing—avoids the bull's horn; and each day he loses popularity and drawing power. There are new fighters coming up each season and after two or three bad years a bullfighter finds himself without contracts, out of training because he has no chance to keep his judgment of distance and confidence by fighting. Then he has to accept what fights he can get as a substitute, kill the bulls no one else will kill and, being out of practice, if he tries anything brilliant the serious horn wound is nearly inevitable.

Bullfighters start their profession in two ways. If they have economic advantages, they can go to the bull ranches of Salamanca, principally, and learn to handle bulls through practicing on the female calves when they are tested for fighting quality. They will have the aid and counsel of mature bullfighters who will correct their faults and tell them how to do things. In this way they are sometimes made good, artistic, mechanical bullfighters who have a great success when they are working with the young bulls in the *novilladas* or minor bullfights, this success sometimes continuing until they get their first horn wound from a real bull, after which they may lose their courage and usefulness entirely.

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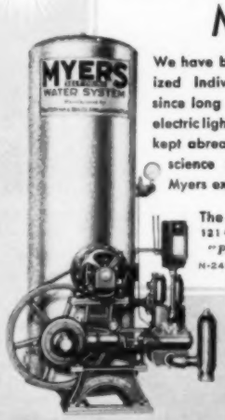

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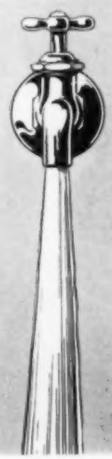

A. P. Giannini Says—

"The new publication is astonishing. I do not recall having seen anything like it. The scope of the material, as well as the way in which the subject matter has been treated, made a deep impression on me.

The article dealing with Branch Banking, I found of particular interest. The author, it seemed to me, dealt with the material most interestingly, and with a degree of authority not usually encountered."

Fortune

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The Book-Cadillac Hotel

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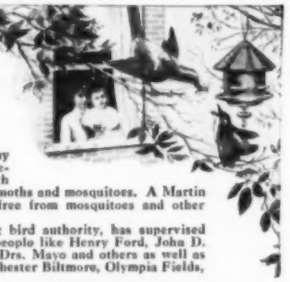
Poor boys, without any financial protection, follow the bullfights as bootblacks, eager to get into the ring in any kind of an amateur fight no matter how dangerous; practicing the various passes on each other, a passing waiter, a cab horse; riding under the seats of trains with their fighting capes rolled up as pillows; going for days without food when they have been put off a train somewhere by a conductor who catches them without a ticket; going through all the hell of the *capeas* or village fights where an old, experienced criminal of a bull is let loose in the barricaded square of a country town and all the aspirant bullfighters may practice with it or be practiced on by the bull. There was one such bull that was used in the province of Valencia which killed sixteen amateurs and crippled badly more than thirty others before the law forbidding *capeas* was enforced and the bull was finally sent to the slaughterhouse. Boys following this method of learning to bullfight get the worst of it first, but they do not have to worry about having their confidence suddenly destroyed by their first wound or by some bull that may have other ideas than to follow the cape.

A bullfighter may spend some years as a *novillero* or killer of young or defective bulls. Unless he has rich backing he will kill no young bulls. Those will be saved for the young phenomenons who are being rapidly pushed ahead by people interested in their careers. The average aspirant bullfighter will have to contend with bulls which are too big, too old, too dangerous to be accepted by the artistic heads of his profession. He will be wounded again and again; in all his fights as a *novillero* he will never get up to a thousand dollars a performance, and he will have to spend a good part of what he makes on publicity and propaganda in the bullfighting papers; but if his physical means and his passion for bullfighting remain intact, then, finally, he may be made a *matador de toros* or formal bullfighter. He will then be in competition with the sixty-one other matadors in Spain who were in practice in 1929.

If he gets to the top he will make $200,000 a year in the best years of his life, he does not have to pay income tax on what he earns, and he should, if he can stay near the top, make over $100,000 a year for at least six years. But if he does not get to the top he will have the same dangers, greatly increased because he will have to kill the bulls that are refused as too dangerous or unsuitable to their styles by the aces of the business, and he will make about twice as much as a street car conductor does in America.

So far only one American has entered this competition. He is Sidney Franklin, born Frumkin, of Brooklyn, N. Y., and I salute him. As a matador of *novillos* he has had some fifty bullfights in Mexico, killing all kinds of bulls in competition with local matadors. He had over seventeen fights in Spain last summer, three times filled the arena of Madrid to capacity, got his price up to $1,000 a fight, thinks, talks, and lives nothing but bullfighting, and hopes to be the greatest matador in the world. He has never been gored or badly wounded although he has been tossed frequently in the ring. He is very brave, very skillful, very artistic, and kills very well, and he explained to me how bullfighting was really not dangerous, that there is always a way to avoid being gored, that, in the words of Ricardo Bombita, it is not the bull who gores the man, but the man who gores himself on the bull by some mistake in technique; and I, who have seen nearly every bullfighter in the first twenty seriously wounded at least once,[8] wanted very much to believe him and hoped it was all true.

Ah! A BIRD SANCTUARY



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JOSEPH H. DODSON, America's foremost bird authority, has supervised the building of bird sanctuaries for prominent people like Henry Ford, John D. Rockefeller, Thomas Edison, Harvey Firestone, Drs. Mayo and others as well as country clubs such as Westchester Biltmore, Olympia Fields, Onwentsia, etc.

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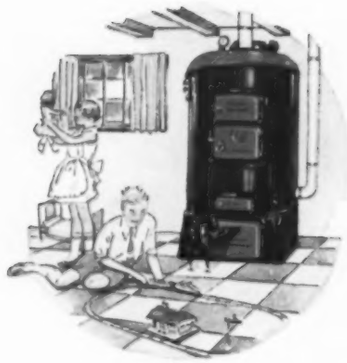

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Appendix

Notes on bullfights

[1] The rate of exchange throughout this article is figured at 14.83 cents per peseta, which is the mean rate for 1929.—*Ed.*

[2] Joselito died in the ring May 16, 1920, eight days after his twenty-fifth birthday, from a horn wound in the abdomen inflicted by "Bailador," or the dancer, a bull bred by the widow, Ortego of Talavara de la Reina.

[3] Some breeders only allow the calf to charge the horse and push against the steel spike once or at most twice, marking the animals for the way in which they go in rather than the number of times. This on the theory that each bull will only charge the steel a certain number of times and that it is better to save his performance for the ring rather than use it up in the fields. However, a really brave bull will charge and recharge as long as his legs will carry him forward.

[4] Miura bulls in spite of their tragic history are not at the present time as dangerous as those of Palha. These bulls, raised in Portugal, are of the old Miura strain but on the ranch where they are raised their pastures are eight miles from the stream they must go to for water. That 16-mile-a-day training has produced the strongest, and, due to the original Miura and Verogua strain not having been tampered with to cut down size and horns, the most formidable bulls of the present time. They are too dangerous for any bullfighters but those in a desperate financial situation to face.

[5] Matadors are so well organized that their standard contracts contain a clause that the promoter must pay any and all fines incurred by the matador if his work is defective. For this reason the authorities hesitate to fine a matador sometimes when he is cowardly, knowing they are not punishing him but the promoter. This clause in matadors' contracts has just been forbidden.

[6] Formerly bullfighters and their *cuadrillas* traveled by train and many improvements in Spanish train service might be traced to the necessity for providing fast trains to deliver Joselito and Belmonte from one part of the country to another overnight during the great years of their rivalry—between 1914 and 1920—when they each gave sometimes over 100 fights a year in Spain alone. Competition and rivalry between matadors, each out of pride trying to outdo the feats of the other, is what brings bullfighting to its highest point. And the demand to be present at this great competition had no small effect on railway service.

[7] The wounded matador cannot go into the ring at once again, as an aviator tries always to go up after a crash, because there is usually, after a goring, grave muscular damage to repair even when no arteries have been severed or cavities in the body opened. The most common place a matador is gored is in the right thigh between the groin and the knee. It is there that the bull's horns come as he lowers his head to hook. The great danger, of course, is the severance of the femoral artery. The matador's sword handler who follows him from the inside of the barrier, in order to be near him wherever he is playing the bull, carries always a rubber cup to be clapped over a possible horn in the thigh to arrest the hemorrhage of the femoral (the largest artery in the body) while the matador is being carried to the operating room. A matador's first thought when he is gored badly, and knows it, is to arrest this hemorrhage, which coming from the big femoral could empty his body of blood before he ever reached the operating table. I have seen a matador rise from the ground after the bull dropped him, clap his hands to his thigh, the fingers trying to contain the hemorrhage and run for the barrier crying out, "The rubber! The rubber! You . . . Where's the rubber?"

Because the man has usually revolved on the horn there are usually several trajects to the wound. The artery must be tied, then all these divergent tears and directions of the main wound opened and cleaned or gangrene or infection are inevitable. There has been a special technique of surgery developed for horn wounds. The most famous practitioners of bull wound surgery are Dr. Segovia of Madrid, Dr. Serra of Valencia, and Dr. St. Sebastian of Bilbao.

[8] For instance this year, out of the first twelve bullfighters, Vicente Barrera was gored badly and gravely wounded once, Valencia II once, Nino de la Palma once, Marquez once, Chicuelo twice, Gitanillo de Triana twice, Enrique Torres twice, and Algabeno once. That makes eight out of the first twelve who were dangerously and gravely wounded last season. Of the four others who were not gravely wounded last year, there is not one who has not received one or more serious wounds which have kept him weeks in bed and endangered his life during past seasons.